

TELEGRAPH AGE

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No. 13.

NEW YORK, JULY 1, 1908.

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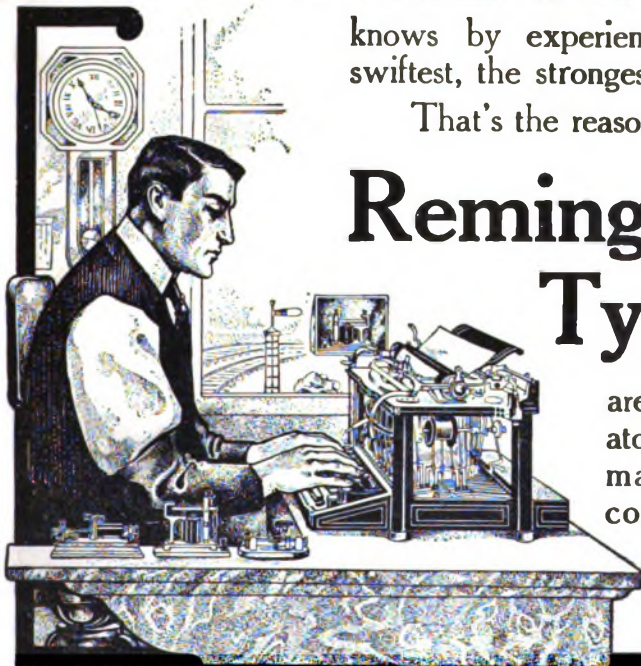
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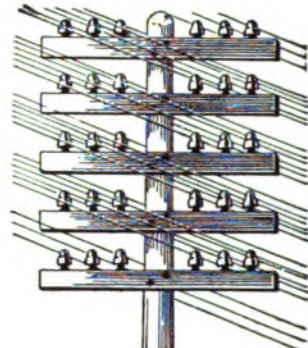
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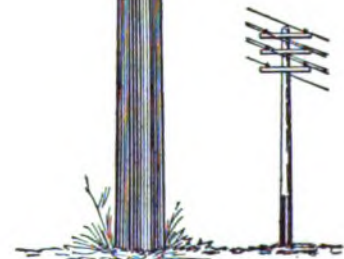
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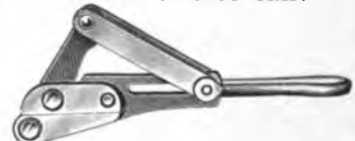
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TELEGRAPH AGE

No. 13.

NEW YORK, JULY 1, 1908.

Twenty-fifth Year.

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SOME POINTS ON ELECTRICITY.

A Few Simple But Important Rules Which Should Always Be Followed.

BY WILLIS H. JONES.

It is a well-recognized fact that some people, no matter how hard they may try, never seem able to make a neat job of anything in the way of mechanics they attempt notwithstanding the fact that often such persons possess intelligence and ability of the highest order in other directions.

Of course such inability on their part is due to lack of what is called natural mechanical ingenuity. Nevertheless one is hardly excusable even on that ground who does not acquaint himself, at least, with the basic rules which govern the practical handling and installation of the apparatus used in his chosen profession.

BINDING POST CONNECTIONS.

For the first illustration let us take the simple operation of connecting the wires with the binding posts of an ordinary relay or sounder. Surely no task could appear simpler, yet how readily we can distinguish by the "finish" the work of the novice from that of the experienced.

Now, while neatness is of course greatly to be desired, a good "finish" is not, after all, the only consideration. The principal aim, and most important factor, is to make the connections in such a manner as to give the greatest possible area of contact between the wire and the binding post thumbscrew and thus indirectly insure a splice

which is not likely to work loose.

One of the mistakes a novice usually makes in attempting to restore a broken connection of this kind is that he brings the hook end of the wire around the post too far, as shown at A in Fig. 1, with the result that when the thumbscrew is depressed the only contact that is made between the wire and post is at the single point where the wire laps over itself and thus presents a double thickness. The depressing screw, therefore, can have but little purchase on a wire looped in this manner, and the result is that after the relay or sounder has experienced a few knocks or jars such as they are subjected to during the process of readjustment, or otherwise, the improper connection becomes either loose or broken altogether. The hook should be so bent that it will

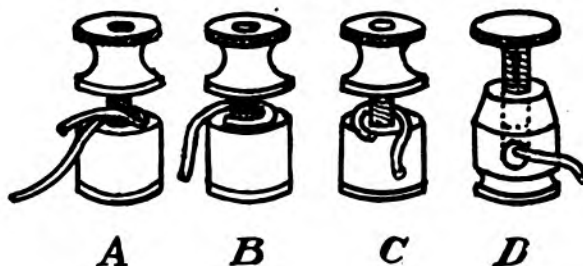


FIGURE 1.

just encircle the binding post, but not lap over. When this is the case, as shown in example B, the thumbscrew when depressed will make firm contact with the wire all around the circle and hold it fast.

The companion mistake to the one just described is that of not only failing to make the loop sufficiently round, but placing the hook terminal on that side of the post which is against the direction of the twist of the thumbscrew when the latter is being depressed against the wire, as shown at C. While this may seem like a trifling matter the defect in such a connection will be apparent to anyone who will stop to consider the fact that with a right-hand twist movement of the thumbscrew and a left-hand formation of the hook the tendency is to push the wire out instead of in, as would not be the case if we reverse the position and place the short end of the hook on the right-hand side of the post as we face the latter. It should be quite evident that the proper way is to always bend the loop or hook in the direction the holding screw takes in

the operation of being lowered in order to make contact. When this rule is followed the hook will tend to close and hug the binding post instead of opening and struggling to get away from it.

When one is so unfortunate as to be compelled to use the outlandish pattern of binding posts with holes in them for the insertion of the wire, as shown at D, he is simply doomed to take a chance on a permanent connection or use eternal vigilance in order to feel safe. About the only advice we can give is that the screw must not be depressed so hard that it cuts the soft copper wire and thus creates a tendency to be easily broken or given such an angle that will subject it to frequent twists when the cord is moved. Binding posts of this type should be inspected at short intervals instead of waiting for a complete breakdown, as there is nothing so exasperating as those little infant troubles which are not sufficiently developed to find or even suspect except by those who have had long experience as a "trouble hunter."

SWITCH LEVER DEFECTS.

Whenever a chief operator allows a steel pen to be inserted between a switch lever and the disk it should normally rest on, for the purpose of closing the local circuit, except possibly in a case of great emergency; it is safe to conclude that he is either lacking in mechanical ability or not impressed properly with the highly dangerous nature of such a connection. In either case it is a question as to whether the defective switch or the indifferent chief will eventually do the most harm to the service.

When a switch becomes in such a condition that it requires auxiliary help to maintain contact, the lever should at once be removed and bent properly by means of a pair of pliers. There is no use in attempting to give the metal a downward inclination by hammering it while still in position, as the disk will not permit a further depression. The proper way is to remove it and then shape it as required, after which it will be as good as new when replaced.

(To be continued.)

Recent Telegraph Patents.

A patent, No. 889,592, for a telegraph system, has been granted to Stephen D. Field, of Stockbridge, Mass. A local inductive shunt at each station is bridged directly across the key thereat, but does not include the local relay. There is a short-circuiting shunt for bridging the key and the inductive shunt when desired.

A patent, No. 889,784, for a telegraph system, has been issued to Charles K. Jones, of Quincy, Ill. The armature of a relay is arranged to close the circuit of an electromagnet. The armature is supported on a rotatable disk.

A patent, No. 889,787, for a means for producing telegraphic transmitting tapes, has been awarded to Isidor Kitsee, of Philadelphia, Pa.

Three keys are provided in this device, two for punching holes in the tape and for moving it definite distances and the third key for determining which of the other keys shall operate.

A patent, No. 889,788, for electric transmission of intelligence, has been taken out by Isidor Kitsee, of Philadelphia, Pa. A telegraph line has the two line wires twisted together so as to be conductively independent but inductively related to each other.

A patent, No. 890,042, for an automatic telegraphic transmission instrument, has been secured by John Gell, of London, England. Automatic telegraph transmitter of the type adapted to send dots or dashes continuously by alternate movements of the operating key. Relates to details of the T-shaped operating lever, having specially constructed contacts.

The following patent has expired:

Patent No. 454,338, for an electric telegraphic apparatus, held by S. V. B. Essick, of Brooklyn, N. Y.

Personal.

Mr. Melville E. Stone, general manager of The Associated Press, supervised the work of that organization at the Republican National Convention at Chicago.

Mr. T. J. Cooper, manager of the Bay City, Mich., office of the Western Union Telegraph Company, has returned from a European trip after an absence of eleven weeks.

Mr. Edward H. Johnson, a well-known old-time telegrapher and a former president of the Magnetic Club, New York, who has been abroad on business for ten years past, has returned to this country.

Mr. Harry O. Rugh, of Sandwich, Ill., engineer of the Sandwich Electric Company of that place, was a recent New York visitor, stopping over on his way to Montreal, whither he went to attend the convention of the railway telegraph superintendents.

Mr. James H. Drakeford, well known in the telegraph profession, formerly manager of the Cotton Exchange office in New York for the Western Union Telegraph Company and at one time manager at Asheville, N. C., is now engaged in the practice of his profession as an optician in New York.

Major J. Orton Kerbey, of Washington, the old-time telegrapher, sailed for Brazil on June 20, going thither in the interest of the Pan-American Bureau, in whose employ he is. The major expects to make a trip of one thousand miles up the Amazon river and also to journey up the Madeira river. This is a country with which he is familiar, having formerly visited the same. At one time Major Kerbey was United States consul at Para, Brazil.

Postal Telegraphic Apparatus.

[Under this head there will appear in each issue of Telegraph Age an illustration and descriptive account of some feature of the equipment of the Postal Telegraph-Cable Company, prepared by John F. Skirrow, associate electrical engineer of the company.]

The switchboard block shown in the accompanying cut is intended for use in small offices, such as hotel and city branch offices, where facilities for cross-connecting wires are not required.

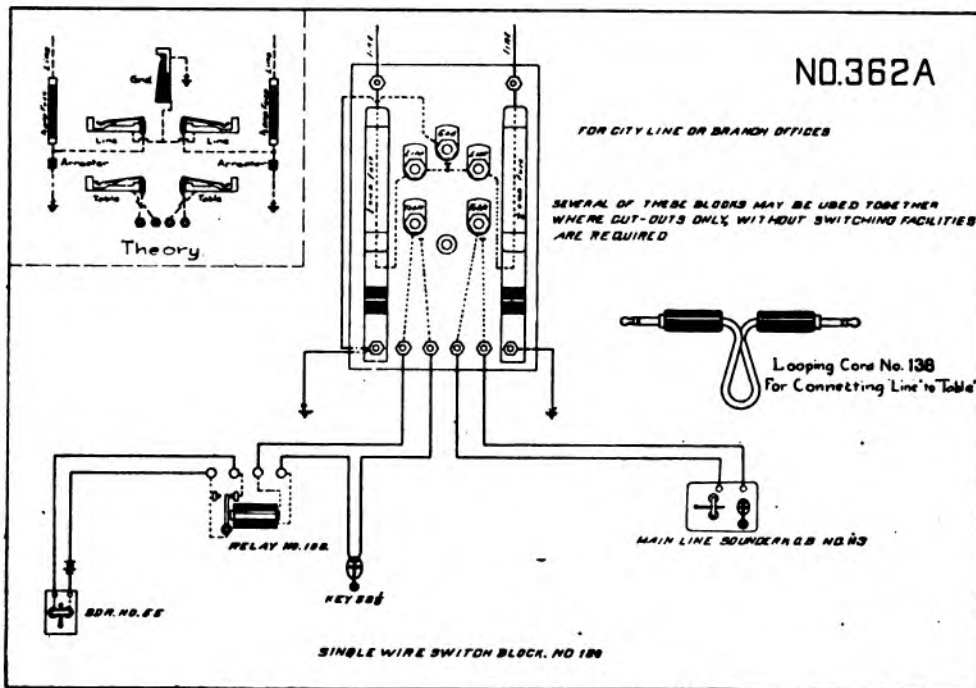
Provision is made to operate one or two instruments upon a loop and to split the loop by grounding it so that it may be used as two independent circuits.

Each of these blocks contains the entire fuse, arrester and cut-out equipment necessary to equip one wire in a branch office. Connection from the line to the instrument is made by a short cord

John W. Mackay, to the University of Nevada, is back again in New York.

Mr. H. C. Shaw, of San Francisco, electrical engineer of the Pacific division, who was in New York lately on company business, and who was accompanied by Mrs. Shaw, is on his way home, breaking the long trip by numerous stops at important cities enroute.

The new combination lunch room and restaurant on the thirteenth floor of the building, provided by this company, mention of which has previously been made, was opened on June 18. Located directly over the operating room, with which it communicates by means of a stairway, it is most convenient of access to those for whose use it is designed. The apartment is of ample size, airy, abundantly lighted by a number of outside windows and numerous electric lights, and



with a double plug upon each end, one plug being inserted in the jack marked "Line" and the other in the jack marked "Table." In a hotel office these plugs may be removed when the office is closed for the night, and the circuit is then continuous through the line jacks. This reduces the liability to interference to the circuit by unauthorized persons.

The general construction of this block is identical with the No. 128½ block described in the June 16th issue, the porcelain bases of these blocks being interchangeable.

Postal Telegraph-Cable Company.

EXECUTIVE OFFICES.

President Clarence H. Mackay, who stopped over at Chicago to attend the Republican National Convention on his way home from Reno, Nev., whither he went to make his gift of a School of Mines building and a statue of his father, the late

with its handsome decoration and furnishing in mission oak, it presents altogether an exceedingly attractive and cheerful interior, a dining room of which Postal employes may well be proud. The neatness of the place, the air of refinement which pervades it, at once favorably impresses the observer. As accommodations are furnished for sixty persons at a time, it is not likely that the room at any time will become overcrowded. It is kept open from seven o'clock in the morning until eleven o'clock at night. An excellent bill of fare is maintained, affording a menu sufficiently tempting to satisfy all reasonable exactions, and at charges that cannot be considered too heavy a tax on the ordinary pocketbook. The kitchen is a model of its kind, the latest appliances in steam, gas and refrigeration having been installed. Mr. T. J. Howlett, who for eight years has had the care of similar accommodations in the Chicago office, is in charge of this undertaking here.

Another feature of distinct merit just established, also on the thirteenth floor, is a very cosily appointed rest and reading room, designed exclusively for the use of lady operators. It is a good thought well executed, and should be heartily appreciated, as it doubtless will be. All of these improvements carry happily into effect the humanitarian ideas of President Mackay in the praiseworthy endeavor to promote the welfare of employes.

A new and larger office is to be established at Macon, Ga., in the Jaques building, on Fourth street.

Because of extensive additions to be made to the building in which the office at Birmingham, Ala., is located, new quarters are to be occupied at 2004-2006 First avenue, at a point nearly opposite its present location. A handsome office will be established, providing a large receiving room on the first floor, space in the basement, with an operating room on the sixteenth floor. Air tubes, conduits, etc., will connect the lower with the upper floor.

RESIGNATIONS AND APPOINTMENTS.

Mr. W. C. Lloyd, manager at Memphis, has been appointed manager at New Orleans, vice W. A. Porteous, resigned, to enter the practice of law. Mr. Lloyd has been succeeded at Memphis, by J. F. Wilson, chief operator. Prior to his departure from Memphis Mr. Lloyd was the recipient of a handsome cut glass punch bowl and set of cups, presented by the employes of the office.

Western Union Telegraph Company.

EXECUTIVE OFFICES.

President Clowry is again this season, as now for a number of years past, a summer resident of Long Branch, a place for which he has developed a special fondness since making his permanent home in New York. He comes in every day to business, except now and again when he is tempted to take a day off.

Vice-president G. W. E. Atkins will make his home during July and August at Seabright, on the New Jersey coast. Like the Colonel, he will be a regular commuter to and from New York, for he will be found at his desk daily.

General Thomas T. Eckert, chairman of the board of directors, notwithstanding his eighty-seven years, is frequently in attendance at his office and still retains an erectness of figure, vigor of carriage and firmness of speech, the same marked characteristics exhibited in the earlier years of his life.

Mr. George H. Fearons, general attorney of the company, who went abroad early in June, is at Carlsbad, where he is obtaining a much needed rest and finding healthful refreshment in taking the baths at that noted spa. He will probably be absent several weeks still.

RESIGNATIONS AND APPOINTMENTS.

Mr. Fred Fairchild, for many years chief oper-

ator at the New Haven, Conn., office, has been appointed manager, vice C. F. Annett, who has been transferred to Goldfield, Nev.

The summer office at Narragansett Pier, R. I., has been opened, with Miss M. A. Newton in charge.

The Railroad.

The Boston and Maine Railroad has installed satisfactorily the telegraph system on its wires between Boston and Rotterdam Junction, N. Y.

The telegraph school conducted by the Philadelphia and Reading Railway, at Reading, closed on June 30. It has had a useful and successful existence, graduating over ninety telegraph operators.

Mr. F. S. Rawlins has been appointed superintendent of telegraph of the Southern Pacific Company, in effect June 20, with headquarters at San Francisco, Cal., vice A. E. Roome, resigned.

A patent, No. 890,195, for a telegraph, has been granted to Harve R. Stuart, of Wheeling, W. Va. In this telegraph there is a uniformly rotating disk, a magnet with an elongated pole face movable over the surface thereof, and means for angularly displacing the pole face during movement.

Under a decision by Judge Tarrant, on June 17, the State of Wisconsin wins in its attempt to secure the enforcement of the eight-hour telegraphers' law. In the test case instituted by Attorney-General F. L. Gilbert against the Chicago, Milwaukee and St. Paul Railroad in the name of Edward A. McGrath, a telegrapher, the court overruled the demurrer made by the road and gave the state a verdict in the sum of \$1,000 and costs, amounting in all to \$1,050. It is said that an appeal will be taken by the road. According to the allegations in the complaint, Edward A. McGrath, a telegrapher employed by the Milwaukee road, was worked twelve consecutive hours on January 11, 1908. It was claimed that this was done in direct violation of chapter 575, section 1816 of the laws of 1907, which is known as the Eight-Hour Telegraphers' Law. As a penalty, the state asked that damages in the sum of not more than \$5,000 and not less than \$1,000 be assessed against the road. In its answer and demurrer, the road alleged that many of the trains, orders for which were telegraphed by Mr. McGrath, were interstate trains and were therefore not affected by the Wisconsin law. It was further claimed that the section in question is not constitutional because its provisions are in conflict with the commerce clause of the constitution of the United States.

The practical side of the telegraph is discussed in every issue of Telegraph Age in a manner to interest and aid every individual operator in the service. Why not secure the benefits of such information by subscribing for the paper—\$1.50 a year.

The Barclay Printing Telegraph System.

BY WILLIAM FINN.

[Continued]

THE PERFORATOR.

[On page 396 of the June 16 issue, on the eighth line preceding the close of the first article of this series, the "space," which should have been represented by three dots (. . .) on the recording slip was, owing to a printer's error, mutilated into a series of six dots.—Editor.]

The object, principle and action of this machine (a photograph of which is shown in Figure 6) may, before going into the subject-matter in detail, be briefly outlined as follows:

The apparatus is used to prepare a tape upon

of its stroke, a common or universal bar is brought into action which releases the clutch mechanism, and this in turn drives forward the selected punching and feeding levers. The perforations in the paper, and the withdrawal of the punches therefrom, are made a little in advance of the feed movement, after which action all of the mechanism is reset automatically ready for the next cycle of operations. A more detailed description of the various parts of machinery will now be given.

As already intimated, the perforating machine is entirely mechanical with the exception of the electric motor (40, Fig. 7), which is adapted to run at a speed of from 1,800 to 2,500 revolutions per minute when connected with a 110-volt direct-current source of supply. The keyboard is of the

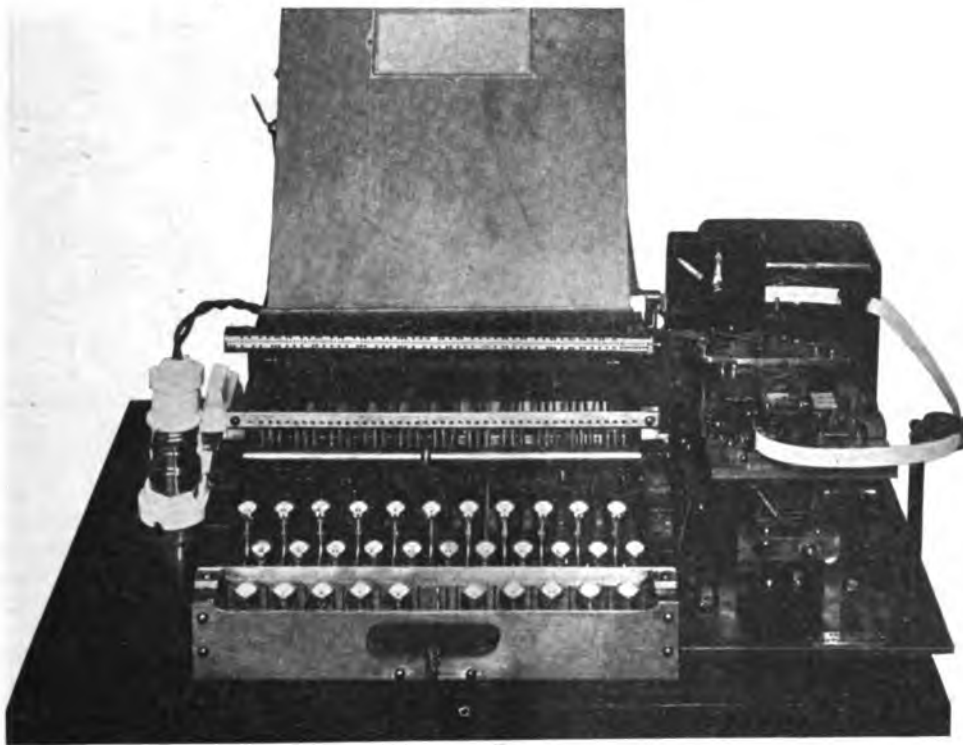


FIGURE 6—PERFORATOR.

which are perforated the various telegraphic characters representing the messages intended for transmission. It is made up principally of a system of levers, bars, links, etc., and a small electric motor, which is suitably geared to operate a clutch and cams when any lever of the keyboard has been depressed.

In the act of depressing a key a certain number of punch levers are selected and brought into line with the particular combination of punches required to perforate the character desired. Simultaneously with this action, one of a series of feed levers is also selected for the purpose of controlling the forward movement of the tape after the latter has been duly perforated.

When the key lever has nearly reached the end

universal type, and all of the holes representing a letter or character on the punched tape, as well as the proper spacing thereof, are produced by a single stroke of the key lever. On the underside of each of these levers (2, Figs. 7 and 8) are a series of tits (shown at 45 in Fig. 8) for selecting the proper punches, as well as the feed pins corresponding therewith.

When a key lever is pressed down six punch bars (3, Figs. 7 and 9) and one feed bar (4, Figs. 7 and 11) are carried with it. The punch bars (of which there are sixteen in all) are connected by means of links to bell cranks and punch levers (respectively shown by the numerals 8, 9 and 10 in Fig. 9), the latter being placed directly behind the punches. The feed bars (six in all) connect

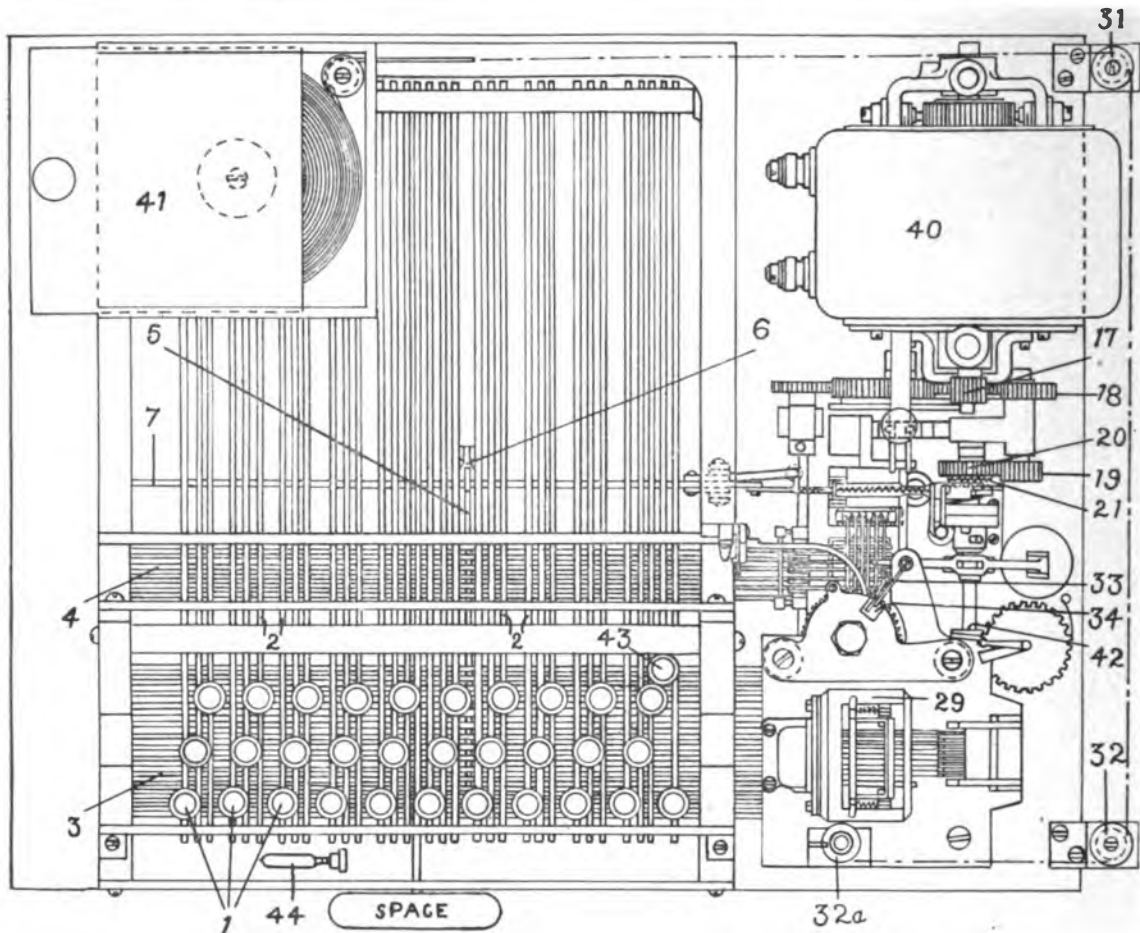


FIGURE 7—PLAN.

through the medium of hook links (11, Fig. 11) with the bell crank feed levers (12) which are placed below a series of cross feed levers (13, Fig. 10) with tits on the lower edge. These crossfeed levers occupy a position immediately below the feed wheel pins (35, Fig. 11) which control the

or feed row of holes in the punched tape) as well as with a similar number of selecting pins arranged vertically so as to move either up or down, being held in position by the action of spiral springs.

Under the control of these selecting pins the

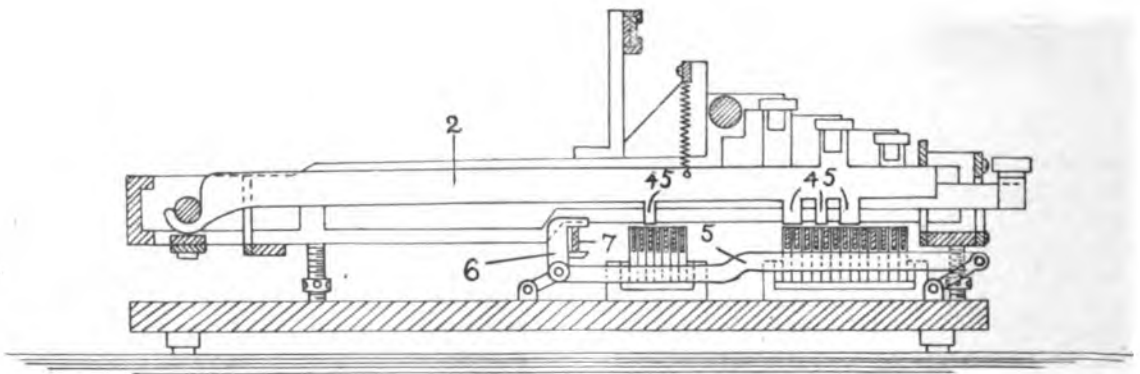


FIGURE 8—SIDE VIEW.

feeding of the tape. The feed wheel (34, Figs. 7, 10 and 11) is provided with fifty small pins rigidly inserted in its periphery and projecting therefrom at intervals of one-tenth inch from center to center (to correspond with the spacing of the center

movement of the feed wheel ranges from four-tenths to nine-tenths of an inch, according to the particular letter or character to be selected. The feed wheel is mounted frictionally on an upright shaft, on the lower end of which is a 90° spiral

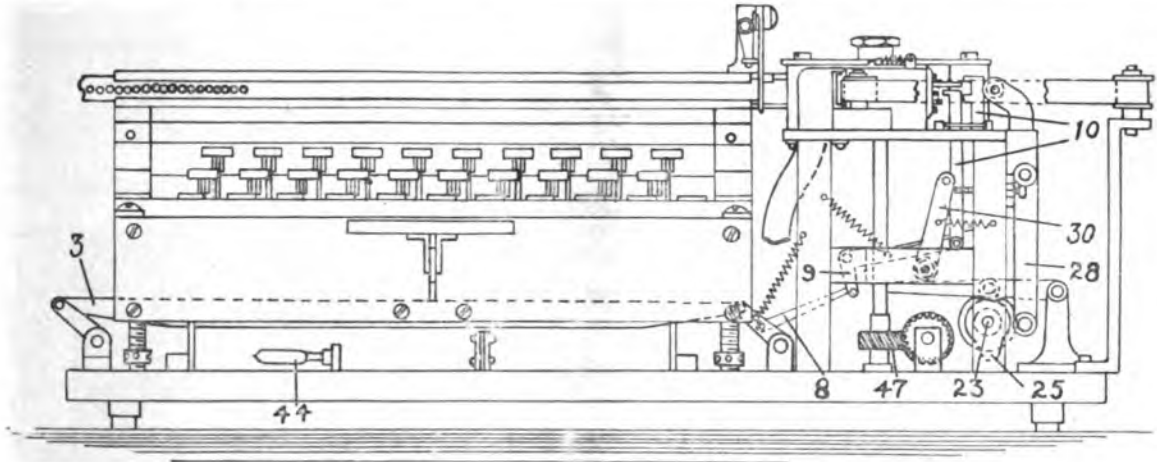


FIGURE 9—FRONT VIEW.

gear (47, Figs. 9 and 11) meshing into a companion gear placed on one end of the horizontal shaft (36, Fig. 11). On the opposite end of this shaft is a spring barrel containing a clock

through which power is transmitted to the feed-wheel. The clock spring is maintained at the required tension by the constant revolution of a drum (50, Figs. 13 and 14) connected with the

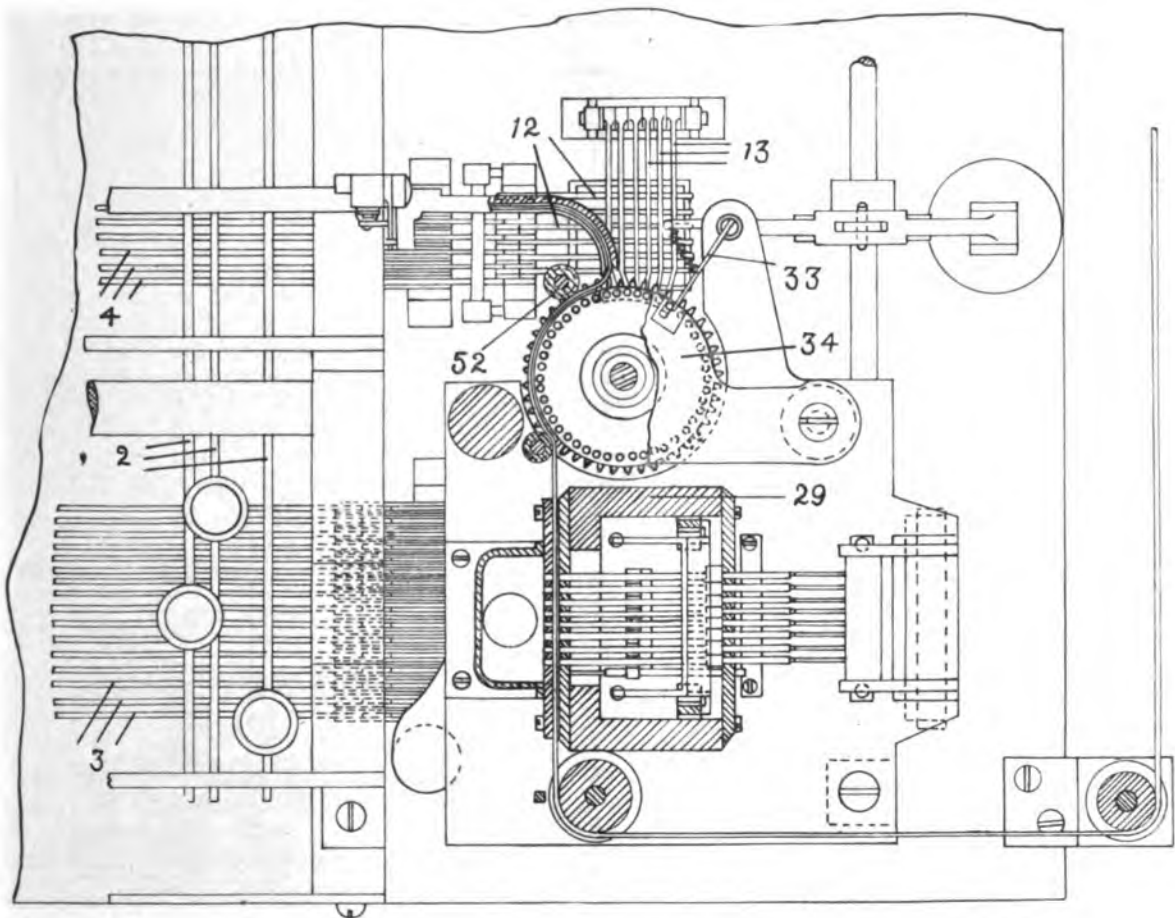


FIGURE 10—SECTIONAL PLAN.

spring, to which is attached at one end a leather shoe (48, Fig. 13), its remote end being fastened by hook and eye to a flat disc (49, Fig. 14). On one side of this disc is the clutch (37, Fig. 14),

motor, the tendency being to wind or pull the spring in a direction similar to that in which the drum rotates.

The amount of pull or tension exerted by the

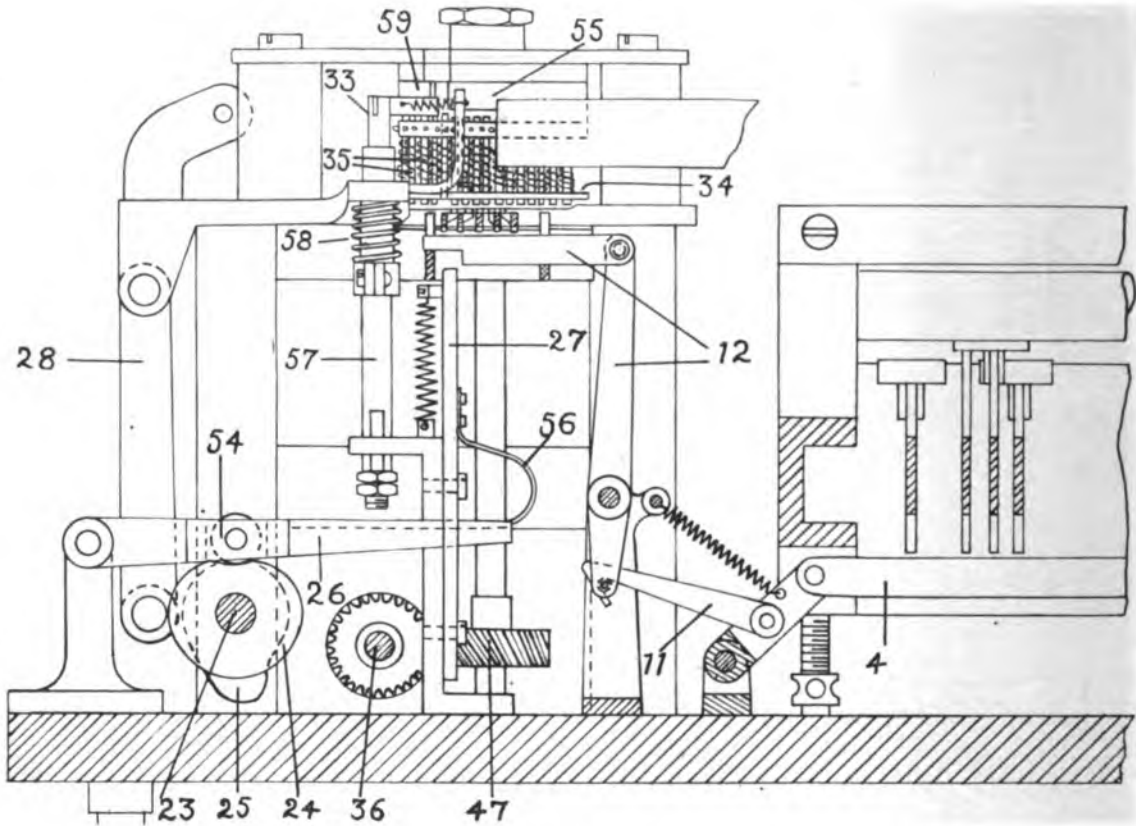


FIGURE 11—REAR SECTIONAL VIEW.

barrel spring should be just enough to insure quick action on the part of the feed wheel when feeding for the various characters. Should the pull be too strong the upright pins will break or bend, or become so wedged in the holes provided for them as to check their movement. If, on the other hand, the pull be too weak, poor "spacing" is liable to result, and possibly a piling of the

thickness of the felt or fibre washers interposed between the discs and collar on the shaft. The particular object in making the feed wheel friction-tight only, is to produce a cushioning effect, whereby the force of the blow of the upright pins against the limiting stop (59, Fig. 11) is consider-

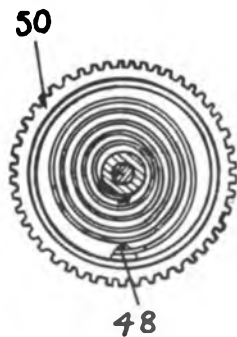


FIGURE 13—SPRING BARREL.

holes in the tape when the machine is operated at high speed. The amount of pull can be regulated by changing the length of the spring, or by opening or closing its convolutions on a suitable arbor. The friction of the feed wheel on its shaft can be adjusted by increasing or reducing the

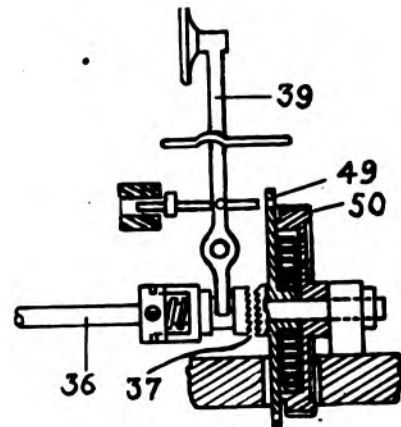


FIGURE 14—SPRING BARREL AND CLUTCH KEY.

ably modified in the act of feeding. The amount of this friction should be just sufficient to overcome the pull exerted by the barrel spring.

(To be continued.)

Railway Composite Apparatus



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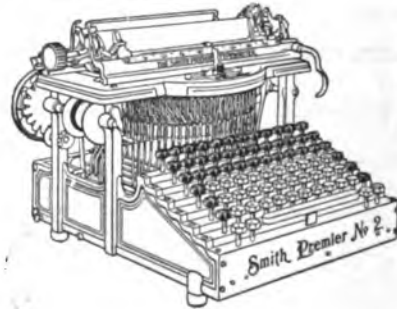
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JULY 1, 1908.

The Book Department of TELEGRAPH AGE has always been a prominent and carefully conducted feature of this journal. The desire has been and is to furnish our readers and buyers everywhere the readiest means possible of securing such technical books as they may require. Aiding buyers in their selection with advance information, which at all times is cheerfully furnished; promptness in sending books, filling all orders on the same day of their receipt, has brought to this department a generous clientage. Catalogues fully covering the range of books treating on the telegraph, wireless telegraphy, the telephone, as well as those on the general subject of electricity, together with the principal cable codes, will be sent to any one asking for the same.

To Investigate the Telegraph.

Under the provision of a resolution adopted recently by the Senate, Secretary Oscar S. Straus, of the Department of Commerce and Labor, has arranged for a thorough investigation of the operations of the telegraph companies of this country, placing the investigation in the hands of Dr. Charles P. Neill, Commissioner of Labor, and Herbert Knox Smith, Commissioner of Corporations. These two will co-operate in the making of the inquiry, Commissioner Neill looking after the labor end, and Commissioner Smith conducting the investigation into the financial affairs of the companies. The report will be ready for submission to the Senate when it reconvenes next December.

Let the Military Telegrapher Be Pensioned.

In the platform adopted at the Republican national convention occurs the following:

Another Republican policy which must ever be maintained is that of generous provision for those who have fought the country's battles and for the widows and orphans of those who have fallen. We commend the increase in the widows' pensions made by the present Congress and declare for a liberal administration of all pension laws, to the end that the people's gratitude may grow deeper as the memories of heroic sacrifice grow more sacred with the passing years.

This declaration pledges the Republican party to liberal views respecting the question of pensions. This is proper when justice is carefully observed and no abuse of the privilege is permitted. The military telegraphers who served in close and vital relationship with the army during the Civil War, whose movements they conserved, frequently with heroism and always with intelligent devotion and patriotism, should now receive the recognition which is their right and be placed upon the pension list of their country. The meting out of strict justice makes this act obligatory on the part of the government, for deserving army war veterans should not be ignored, overlooked or forgotten in any distribution of merited bounty.

In a technical sense these brave men, although acting in and for the army, may be said not to have been of it, because the nature of their services was to a certain extent of a secret character, hence the failure in times past to acquire an army standing, although performing army duties of incalculable value. This absence of an actual army rating, which has shut out this contingent of men from government allowance, was due to the force of circumstances incident to unsettled conditions existing at the close of the war. It is a well-known fact that had President Lincoln lived the standing of the military telegraphers as an integral part of the army would have been admitted and so declared by the enactment of law.

The number of surviving military telegraphers is steadily growing smaller as their heads become grayer and their bodies more feeble; some have need of help while others do not require it. This nation cannot afford to be other than just and generous in the treatment it accords its real defenders who served it faithfully in time of war. The dominant Republican party, by the action of its accredited representatives at Washington, has thus far refused to treat with fairness and right the demands that have been put forward in behalf of the military telegraphers. The pledge to which that great party now stands committed in its declaration, as expressed in a national platform, should so act as to overcome all existing prejudices of "establishing a precedent," behind which platitude refuge has hitherto been taken for refusing to place the military telegrapher on a plane co-equal with that of the American soldier with whom he served, comrade to comrade, in "a time that tried men's souls." A broader sense of justice should in future dominate the congressional mind concerning the question at issue.

An Instance of Government Telegraph.

Government ownership of the telegraph is not attended with the best results in Canada. It appears that the government owns a telegraph system extending along the north bank of the St. Lawrence river, and that it has not only been diligent in building telegraph lines, but likewise in constructing roads and bridges on telegraph account, particularly within the limits of the electorate of a Mr. Joseph Girard, a member of Parliament from a Quebec district. The acts of the individual politicians are much the same on both sides of the boundary, for it seems that when any construction work is required in the district referred to, Mr. Girard manages to exert a political prerogative in the premises in the matter of appointments. He not only successfully names the foreman, but dictates as well, we are told, the patronage list for the telegraph department, thus affording employment for faithful constituents. So flagrant became the operations in this special telegraphic field that finally the government rubbed its eyes and roused itself to the virtuous belief that something needed to be overhauled. Forthwith an investigation was ordered, and this is the way the Ottawa correspondent of the Toronto Mail and Empire reports the matter:

"J. C. Tache, government engineer, was examined on June 12 before the Public Accounts Committee respecting the government telegraph lines on the north shore of the St. Lawrence river. He was examined by Mr. Ames (Conservative, Montreal), who sought to show by the witness that there had been unnecessary duplication in constructing telegraph lines. He admitted that there were not less than three parallel lines between Chicoutimi and Tadousac. It also appeared that many small branches were built, some only one or two miles long. This was explained by the fact that it is difficult to procure operators. The government found it necessary to extend a wire to the home of anyone who could be procured to act as telegraph operator. Mr. Tache admitted that many branch lines were built to accommodate a single lumberman or corporation. In nearly all these cases the government not only furnished the poles and wires, and paid for the cost of construction, but it also paid for the right-of-way across private property. In one case the government built a bridge at a cost of \$200.

"Witness justified this expenditure on the ground that it would facilitate the linemen in doing their work. Mr. Ames thought that the bridge was probably built to accommodate the school children in that neighborhood. It seemed peculiar that a telegraph line running on one side of the river only could be benefitted by constructing a bridge across the stream, and at right angles with the line.

"In another case the witness admitted that a municipal bridge had burned down, and that, instead of the bridge being built by the municipality, the Dominion Government contributed to the cost of reconstruction, and charged it to the

telegraph department. In a third case in this district, a bridge was built entirely at the cost of the telegraph department, although it was part of a municipal highway.

"The Dominion Government seems to have been busy in helping out Quebec municipalities. In one case, \$1,000 was expended in repairing a road, but Mr. Tache claimed it was necessary as a maintenance of way expense.

"Mr. Tache was quite frank about how these improvements were carried on. Whenever a work was determined on, he said that he applied to Mr. Girard, M. P. for the district, who appointed a foreman. The foreman, in turn, employed all the men. In buying supplies, he was guided by the advice of the member."

History Pleads for Them.

The Binghamton (N. Y.) Press recently published an editorial on "Pension the Telegraphers." The article advocated giving the military telegraphers who served so faithfully during the Civil War the same recognition accorded to the officers and soldiers. Attention was called to the fact that the greatest generals in the northern armies many times recognized the value of the services rendered by the military telegraph corps. The paper in question printed a copy of a telegram received from Joseph Schnell, a resident of Binghamton, which passed through his hands in the course of his duties when serving as a military telegrapher, and which is as follows:

Time Recd., 1 p.m.

U. S. Military Telegraph, War Department,
Washington, D. C., Feby. 2, 1863.

From Murfreesboro, Feby. 2, 1863.

To Col. Stager, Gen'l Supt. U. S. Mil. Telegh's.

I think the cutting down of the pay of headquarters operators here prejudicial to our interests. Those at my headquarters do more work and have more responsibility than any captain in the service.

That such men should have less honor, consideration and compensation than common soldiers is not right. We do not want snipes of boys in such positions; yet your salary to them is not better than is given to the porters of warehouses in our large cities. Justice ought to be done and the laborer should have what he earns. Please have this corrected and oblige, your friend,

W. S. ROSECRANS,

Major General.

The historical protest of the hero of Iuka and Corinth pleads for the old time war telegraphers as strongly now as when it was clicked over the wires over forty-five years ago. It is part of the official records of the war. It tells the story of the wrongs of the war operators, and what they should have, in a nutshell. In making it public, Mr. Schnell says that he has no direct interest in the movement to pension the war telegraphers, as he himself is pensionable. But he makes it public in justice to the great number of war telegraphers who are not now in the pensionable class, although deserving that honor and reward as much as any of the veterans now on the rolls.

Make your work a means of character building.

THE RAILWAY TELEGRAPH SUPERINTENDENTS MEET IN CONVENTION.

The convention of the Association of Railway Telegraph Superintendents, which held its twenty-seventh annual meeting this year at Montreal, commencing a three days' session on June 24, brought together many of the brightest minds in the higher telegraph service of the railroads of this continent, the attendance being the largest in the history of the association. As anticipated, the use of the telephone in train despatching was the theme that dominated the convention. Its utility for the purpose named was abundantly recognized. Its value was set forth in papers read and in the discussions that followed, arousing enthusiastic approval; the same thought likewise illuminating much of the conversation current in the leisure hours of social intercourse. The subject was well

tended to the visitors, was, as a superintendent remarked, "calculated to act as a distinct aid in advancing any future treaty-making programme."

The convention was called to order at ten o'clock on the morning of Wednesday, June 24, the point of assembling being in the "Ladies' Ordinary" of the Windsor Hotel, Montreal. E. P. Griffith, of New York, president of the association, and superintendent of telegraph of the Erie Railroad, was in the chair. In addressing the convention, Mr. Griffith expressed the satisfaction he felt in observing so numerous a body before him, remarking that the meeting was probably the largest attended gathering of railway telegraph superintendents in the history of the association. He then introduced Alderman Sadler, of Montreal, who in a pleasant speech bade the delegates welcome to Canada's chief city. The alderman was succeeded by the vice-president of the Business Men's League, who was very happy in his remarks, and who very graciously tendered a bouquet of flowers to Miss Griffith, the daughter of the president, who was present as the representative of her mother, on the occasion. To the felicitous words spoken and the special act of welcome, President Griffith made fitting response, following which he plunged at once into the business awaiting his attention.

W. J. Camp, of Montreal, vice-president of the association, and chairman of the committee on arrangements, was the first to respond by the reading of his report, which, in addition to his own, bore also the signature of W. W. Ashald, of Montreal.

Next came the election of new members, as follows:

B. B. Baughman, superintendent of telegraph, Wheeling and Lake Erie Railroad, Canton, O.; E. R. Bonnell, supervisor and train despatcher, Cleveland, Cincinnati, Chicago and St. Louis Railway, Indianapolis, Ind.; George Boyce, signal engineer, Chicago, St. Paul, Minneapolis and Omaha Railway, St. Paul, Minn.; F. G. Boyer, superintendent of telegraph, National Transit Company, Oil City, Pa.; F. M. Brown, superintendent of telegraph, Pittsburg and Lake Erie Railroad, Pittsburg; J. P. Church, chief clerk of the telegraph department, Wabash Railroad, Decatur, Ill.; W. L. Connelly, superintendent of telegraph, Chicago, Indiana and Southern Railroad, Gibson, Ind.; E. E. Dildine, assistant superintendent of telegraph, Northern Pacific Railway, St. Paul, Minn.; A. Hatton, inspector of transportation, Canadian Pacific Railway, Winnipeg, Man.; F. T. Jennings, superintendent of telegraph, Canadian Pacific Railway Company's telegraph, Sudbury, Ont.; W. M. Johnson, Jr., trainmaster, Bessemer and Lake Erie Railroad, Greenville, Pa.; M. W. Maguire, general superintendent, Norfolk and Southern Railway, Norfolk, Va.; W. Marshall, superintendent of construction, Canadian Pacific Railway, Toronto, Ont.; R. W. Mitchener, division superintendent



WILLIAM J. CAMP, OF MONTREAL.
President of the Association of Railway Telegraph Superintendents.

covered in the excellent paper of W. W. Ryder, published in full on another page of this issue. The social features of the occasion were highly enjoyable and served to bring together all present in pleasant intercourse, promoting friendship and acquaintance not only between the active members themselves, but among their wives and others accompanying them; the associate and honorary members and those who attended in their capacity as manufacturers, or sales agents, exhibiting instruments and mechanisms of a character interesting to the superintendents. Some of the working exhibits shown reflected the utmost credit as models of skillful manufacture and of intelligent and forceful application.

A notable feature of the convention was its very delightful international character. The holding of such a convention on Canadian soil—to become the recipients of such a generous welcome, of such a whole-hearted hospitality, as was ex-

ent, New York, Chicago and St. Louis Railroad, Cleveland, Ohio; George Reith, superintendent, Virginia Railway, Norfolk, Va.; Thomas Rodger, inspector of telegraphs, Grand Trunk Railway, Montreal, Que.; George T. Rooke, inspector of train despatching, Canadian Pacific Railway, Montreal, Que.; J. B. Sheldon, superintendent of telegraph Union Pacific Railroad, Omaha, Neb.; F. W. Smith, chief train dispatcher, Bessemer and Lake Erie Railroad, Greenville, Pa.; P. W. Snider, superintendent of telegraph, Canadian Pacific Railway Company's telegraph, St. John, N. B.; H. D. Teed, superintendent of telegraph, St. Louis and San Francisco Railroad, St. Louis, Mo.; G. C. Todd, superintendent of telegraph, New York, Chicago and St. Louis Railroad, Cleveland, O., and R. N. Young, assistant superintendent of telegraph, Canadian Pacific Railway Company's telegraph, Winnipeg, Man.

The following named were elected to associate membership:

A. A. Bullen, assistant superintendent Contract Department, New England Telephone and Telegraph Co., Boston; A. B. Conover, John A. Roebbling's Sons' Co., Chicago; W. E. Crowell, special agent, New York Telephone Company, New York; H. D. Crouch, sales manager Northern Electric and Manufacturing Company, Ltd., Montreal, Que.; L. C. Hall, special agent, New York and New Jersey Telephone Company, Newark, N. J.; W. E. Harkness, Western Electric Company, New York; L. M. Hemenway, assistant engineer, Ericsson Telephone Manufacturing Co., Buffalo, N. Y.; W. E. Hinman, sales agent, Egry Register Company, Dayton, O.; F. C. Hirsch, manager telegraph system of Canada, Montreal, Que.; M. E. Launbranch, Western Electric Company, New York; E. C. Lewis, Stromberg-Carlson Telephone Manufacturing Company, Rochester, N. Y.; Franklin H. Reed, American Telephone Journal, New York; H. B. Shepard, special agent, Central New York Telephone Company, Syracuse, N. Y.; H. C. Slein, advertising manager Stromberg-Carlson Telephone Manufacturing Company, Rochester, N. Y.; Geo. F. Wiley, special agent railways, Bell Telephone Company of Pennsylvania, Philadelphia; Archibald Wray, telegraph engineer Kellogg Switchboard and Supply Company, Chicago.

The honorary members elected were: Wendall Baker, of New York; L. H. Korty, of Omaha, Neb.; F. G. E. Ferguson, of Vicksburg, Miss., and H. C. Sprague, of St. Louis.

The secretary and treasurer, P. W. Drew, of Chicago, read his report, which showed the association to be in a very satisfactory financial condition.

The convention then passed resolutions of thanks to the telegraph and telephone companies for courtesies extended.

This acknowledgment completed, J. L. Davis, of Chicago, chairman of the committee on topics, made his report. He said that there had been a very general response to invitations to furnish

papers on railroad subjects, as the number to be read would show, and that the excellent character of the papers themselves indicated the exercise of much thought and care on the part of writers in their preparation.

The first paper to be read was that entitled "Despatching Trains by Telephone," by W. W. Ryder, and which as previously stated, is published in full in another column. This able paper was especially well received, and was discussed at length by S. L. Van Akin, Jr., of Syracuse, N. Y., assistant superintendent of telegraph of the New York Central Railroad.

He said that to successfully despatch trains by telephone, on account of the important nature of the work, it was necessary for the pioneers in the field to do considerable engineering in bringing about a departure from established precedent, both in the method of construction and operation. Defects in local battery telephone sets, from a service standpoint, were carefully considered, some of which are as follows:

When a receiver is left off the hook, the bridging bells on a party line cannot be freely operated on account of the short circuit, and in case two or more parties are wanted, the first party called is obliged to "hang up" until the other stations are signaled, and, as sometimes found, the insulation on the hook becomes carbonized, thus failing to cut the receiver out—or partially so—cutting down the ringing of bells, while it would not noticeably cut down transmission. When the receiver is removed from the hook, the transmitter circuit is closed as well as the receiver circuit which often times will cause interruption to communications between other offices on the line, due to speaking before listening, vibration from telegraph instruments, engines whistling or ringing bells, or noise from passing trains.

To obviate these objectionable features, it was recommended that a 2 m.f. condenser be placed in the receiver circuit, and about the time the New York Central was ready to place an order for equipment, we were able to obtain receivers of 700 ohms resistance. The 700-ohm receiver wired in series with the secondary winding of the induction coil (which is standard practice) and a 2 m.f. condenser across the line, brought the bridging resistance of the set, when operative, up to approximately 970 ohms, and with twenty or more stations so equipped, and cut in circuit, it was found that as many bridging bells in series with a 2 m.f. condenser would freely operate. To prevent interruption to communications between other offices, when listening in, it was recommended that a line key and a transmitter key be installed at the outlying offices, the line key being locking, the transmitter key non-locking. In this particular class of work, as it is essential that an operator have the free use of both hands, it was therefore deemed expedient to design a telephone arm having mounted upon it a transmitter and a receiver. The latest improvement in this connection is on exhibit.

With a transmitter and receiver mounted in a fixed position on an arm, it follows that if the ear is pressed to the receiver, the mouth is brought close to the transmitter mouth-piece, insuring good transmission: head telephones were not recommended for use except by the train despatcher, who wears a chest transmitter, on account of the wear and tear on cord, and the liability to breakage, and a tendency not to speak directly into the transmitter with this type of apparatus.

Bridging bells were installed at every third station for emergency use only, as it was not advisable to use ringing current on the line except as stated (for emergency calling) for the following reasons: The first and most important is the liability to de-magnetize receivers; in this respect we have experienced considerable trouble at Ravena, N. Y., which is the monitoring station for our long distance telephone lines; the

receiver at that point is de-magnetized and a new receiver required on an average of every thirty days, due to ringing in the wire chief's ear; second, ringing in operator's ear; third, confusion of bells ringing incessantly where the lock and block signal system is in use, as in our case; fourth, a bridging bell would be required at each station on the line, tending to cut down transmission.

With these facts in mind it was recommended to install the Gill telegraphic selectors on the old despatching Morse circuit, and to provide automatic sending keys at the despatcher's office. This was done, but proved a failure, first, because being too slow, and second, because unreliable, due entirely to outside interference in breaking up the combinations. After much experimenting and hard work by all concerned the Gill telegraphic selector, new type, was finally installed, being the third installation tried out. It is operated over the telephone line, the service being very satisfactory and the operation absolutely reliable.

Arrangements are now being made to extend the original circuit to Little Falls, N. Y., with an additional eight stations, making a total of twenty-five stations, in a circuit seventy-three and one-half miles in length.

Our experimental circuit between Albany and Fonda, forty-four miles long, was ready for service September 29, 1907, but was not made operative until October 2, as the railroad company were not able to meet the conditions of the nine-hour law (New York State, effective October 1, 1907), with telegraph operators, and, for obvious reasons, it was thought best to commence operations by telephone after the conditions of the law had been met. The spirit of antagonism toward telephone train despatching has been very pronounced with us from time to time during the past nine months, but the issues have been successfully met.

I appreciate this opportunity to endorse what Mr. Ryder has said with regard to the practicability and superiority of the telephone over that of the telegraph in the handling of train movements.

The entire afternoon of the first day was given up to an executive session held behind closed doors, the subject considered being the telephone situation.

The ladies of the party were entertained during the day by the committee of Montreal ladies under the direction of Mrs. W. J. Camp. Late in the afternoon, however, the entire attendance at the convention, entertained as guests of the Grand Trunk Railway, were conveyed by train to Lachine and there transferred to a steamer, the return to Montreal being accomplished by water, "shooting" the famous Lachine rapids on the way.

On Thursday, June 25, the second day of the proceedings, the convention was called to order by President Griffith. He announced that J. J. Ghegan, president of J. H. Bunnell & Company, Inc., of New York, would send a souvenir telegraph sounder to each member. Letters of regret were read from H. C. Hope, of St. Paul; C. F. Annett, of Goldfield, Nev.; W. I. Conolly, of Angelica, N. Y.; E. E. Torrey, of Jackson, Tenn.; B. S. Jenkins, of Winnipeg, Man., and B. Brooks and C. H. Bristol of New York.

At this point the reading of papers commenced, the first bearing the title of "Commercial Reports," by Joseph P. Church, of Decatur, Ill., chief clerk of the telegraph department of the Wabash Railroad Company, of which system

G. C. Kinsman is the superintendent of telegraph. Another paper, entitled "Reduction of Telegraphing By Use of Printed Forms," by O. C. Greene, of St. Paul, Minn., superintendent of telegraph of the Northern Pacific Railway, was read by J. L. Davis, of Chicago, owing to the absence of the author.

At this point Acting Mayor Narcisse Lapointe was introduced to the convention. In a brief speech he heartily welcomed the superintendents to the city of Montreal. He expressed his pleasure in appearing before such a representative membership of the railroads and hoped cordially that each of the delegates would find in his visit entertainment as well as instruction.

After the acting mayor had retired, much animated discussion, participated in by many, was had on the paper of Mr. Greene.

President Griffith pleasantly varied the proceedings by reading two old telegrams, one received in New York in 1851, and the other at St. Catharines, Ont., in 1848. Mr. Charles Selden, of Baltimore, suggested facetiously, that an investigation should be made to ascertain the cause of their delay.

Mr. U. J. Fry, of Milwaukee, superintendent of telegraph of the Chicago, Milwaukee and St. Paul Railroad, furnished a paper entitled "Dry Batteries and Telegraph Circuits." Mr. Fry was unable to be present and the services of Mr. J. L. Davis were again brought into requisition as a reader.

In the discussion that followed the reading of this paper Mr. J. J. Ghegan, of New York, explained at some length the form of telegraph keys used in dry battery open circuit work. W. F. Williams, of Portsmouth, Va., stated that in his service on the Seaboard Air Line they averaged 1½ cells of dry battery to the mile of wire.

A pleasant reminiscence of the former meeting of the association at Montreal in 1895 was had in the reading, by Secretary P. W. Drew, of an interesting letter from J. W. Fortune, who at the date mentioned was assistant general manager and superintendent of telegraph of the Grand Trunk System, and chairman of the entertainment committee.

Mr. E. A. Chenery, of St. Louis, superintendent of telegraph of the Missouri Pacific System, read his paper treating on "Adverse Railroad Legislation." His subject was one of peculiar interest inasmuch as it carefully considered the trend of legislative action in its effects on the railroads.

During the time between the closing of the reading of Mr. Chenery's paper and the noon recess, the convention went into executive session behind closed doors.

The first matter taken up at the afternoon meeting was the reading of the paper, "Past, Present and Future of the Association of Railway Telegraph Superintendents," by W. F. Williams, of Portsmouth, Va., superintendent of telegraph of the Seaboard Air Line Railway. The reading of

this paper brought Charles Selden, of the Baltimore, and Ohio Railroad, to his feet in reminiscent rejoinder, for he, together with William Kline, of Toledo, superintendent of telegraph of the Lake Shore and Michigan Southern Railway, were instrumental in the formation of the association twenty-seven years ago. Mr. Selden reviewed briefly the object which prompted its organization, and dwelt on the working out of ideas which have since imparted to the association its present strength, scope and influence. Mr. Kline, who ranks as the dean of the railway telegraph superintendents, also further considered the subject, and in particular expressed his pleasure at seeing so many young and active superintendents taking up the burdens of their office and managing them thoroughly in the interests of the railroad companies.

Mr. C. S. Rhoads, of Indianapolis, superintendent of telegraph of the "Big Four," read his paper on "Qualifying Operators for Train Despatching," which was discussed at some length by Charles Selden, W. J. Camp, of Montreal; A. Hatton, of Winnipeg; George T. Rooke, of Montreal, all of whom explained the methods employed on their respective systems in instructing and qualifying men for duty and placing the same in the line of promotion. Many railroads, it was said, were extremely careful in their selection of operators to fill vacancies in the ranks of train despatchers. On some roads the services of a copying operator were in use, and from these a choice was made when vacancies occurred, a view of the subject which was thrashed out in a thorough way by W. W. Ryder, F. H. Van Etten, of Chicago, and W. P. McFarlane, of Omaha.

Detroit, Mich., was selected for the next place of meeting in 1909.

Then came the election of officers for the ensuing year, the choice of president being unanimously centered upon Vice-president William J. Camp, of Montreal, electrical engineer of the Canadian Pacific Railway Company's telegraph. G. W. Dailey, of Chicago, superintendent of telegraph of the Chicago and Northwestern Railway, was made vice-president, and P. W. Drew, of Chicago, superintendent of telegraph of the Wisconsin Central Railway, was returned by acclamation to the post of secretary and treasurer, held continuously by him since 1883. Mr. Camp and Mr. Drew thanked the convention for the confidence reposed in them, in their selection.

The outgoing and incoming presidents exchanged courtesies, and President Camp on assuming the chair, called for the reading of J. H. Jacoby's paper entitled "Wiring of Station Buildings from the Contractor's Standpoint." This paper was discussed at some length by Messrs. Selden, Camp, Drew and others, who gave the methods in use on their respective systems of running wires into the smaller stations, both underground and aerial. It was the opinion of some of the delegates that not enough attention was paid to this important subject, and Mr. Jacoby

drew attention to simple methods that could be followed with a view of greatly improving the appearance of small stations.

At the opening of the session of the third day, Friday, June 26, the paper of William Maver, Jr., of New York, on "Wireless Telephony," was read. This paper dealt with its subject in a thorough and complete manner, giving a history of the development of this branch of the electrical art from its inception. At its conclusion Mr. J. L. Davis of Chicago, chairman of the committee on topics, took occasion to thank Mr. Maver for his valuable contribution, considered both from a literary and a technical standpoint. Other members voiced expressions of satisfaction over the manner in which this comparatively new subject had been treated.

Mr. L. B. Foley, of New York, superintendent of telegraph of the Delaware, Lackawanna and Western Railroad stated that his road had used the wireless telephone system with satisfactory results between their Hoboken terminal and the various ferry boats of their fleet. The distance over which conversation was carried on satisfactorily was two miles.

Mr. G. W. Dailey, of Chicago, the newly elected vice-president, in responding to calls upon him to address the meeting, took occasion to thank the delegates for the confidence reposed in him, expressed so flatteringly in elevating him to the vice-presidency. He was glad, he said, to cooperate with the other officers and members in the interests of the railway service.

Considerable desultory discussion then followed on various subjects, during which facts were brought out showing that telephone train orders were at present used on many roads for single track operation, among them being the Burlington System, Chicago and North Western, Illinois Central, Lackawanna, Michigan Central and others.

The convention then decided that the next meeting should take place on June 24, 25 and 26, 1909, at Detroit, as previously agreed upon.

A. B. Taylor, of New York, superintendent of telegraph of the New York Central, and E. H. Millington, of Detroit, superintendent of telegraph of the Michigan Central, were appointed a committee to draft resolutions thanking the various companies for courtesies extended in contributing to the entertainment of the delegates at Montreal. These included the telegraph and railroad companies, the Pullman Car Company, Mr. C. R. Hosmer, of Montreal, and various other interests.

Mr. J. L. Davis was instructed to inform Mr. F. F. Fowle of Chicago, who was unable to be present, that his paper on "The Telephone" would be incorporated in the minutes of the association.

A committee, consisting of Messrs. G. A. Cellar, G. H. Groce, G. W. Dailey, E. H. Millington and Charles Selden, was appointed to consider the question of high-tension wires crossing railroads. Considerable discussion ensued as to the duties of the committee. The conclusion reached was that

members of the association wishing forms, rules and regulations governing the crossings of rail-ways by foreign wires should be furnished with what they desire for legislative enactment. While some of the states had adopted laws governing this important subject, other states had taken no action whatever, with the result that no prescribed forms were observed. Many of the crossings were dangerous, and it was the sentiment of many of the superintendents that uniform legis-lative action should be secured in every state.

The convention then adjourned sine die.

By general consent the convention at Montreal was declared to be the largest, best and most suc-cessful of the series ever held. There were over one hundred and fifty active and associate members present, more than double the number in atten-dance at any previous meeting. The social side of the affair afforded an agreeable digression from the demands of business that brought the superinten-dents together. Trolley rides about the city were undertaken, quaint out-of-the-way localities were visited, and the architecture of another day and race, with which the city affords many interesting ex-amples, was inspected. Everybody seemed delight-ed with what was done for them and with what they saw. Perhaps the greatest charm afforded the visitors was beautiful Mount Royal, from which height, above the city of Montreal, a magnificent and extended panoramic view of water and land scenery greeted and held spellbound the vision.

On Friday night fully two-thirds of the delegates departed for Quebec, one hundred and sixty miles distant down the St. Lawrence river. This was "the" excursion incident to the convention. Here Saturday, June 27, was passed, and it may be said that the old city of Quebec, still so essentially French in its characteristics, was thoroughly ex-plored. Mr. Edwin Pope, superintendent of the Great North Western Telegraph Company, to-gether with his daughter, joined the party here, and to him much of the pleasure of the visit was due, for he accompanied the excursionists every-where and pointed out the many attractions of the town. Mr. E. A. Evans, general manager of the trolley railroad system of Quebec, furnished spe-cial cars for the accommodation of the visitors to convey them to the celebrated shrine of St. Anne de Beaupre, stopping at the beautiful Mont-merey Falls.

Montreal was reached on return on Sunday morning, June 28, where the excursionists final-ly separated. The convention of 1908 had passed into history.

Mr. and Mrs. William J. Camp exerted them-selves in every way possible to promote the com-fort and pleasure of the visiting superintendents and other friends. Mr. Camp was most assiduous in his attentions, and the many courtesies ex-tended the visitors by the Canadian Pacific Rail-way Company, of which corporation Mr. Camp is the electrical engineer of the telegraph depart-ment, were no doubt due to his instrumentalities. They were conferred in a manner and on a scale

at once so gracious and so generous as to arouse hearty appreciation and to elicit many expres-sions of gratitude. Nor will the delightful dinner tendered to a few friends at Mr. Camp's residence on Sunday evening, prior to their departure at a late hour for their homes on this side of the border, be forgotten. It will dwell in the minds of all who were present as a charming memory expres-sive of hospitality, good will and companionship.

The ladies of the party expressed their sense of obligation to Mrs. Camp for the many kindly at-tentions shown them, by presenting her, through Mrs. P. W. Drew, wife of the secretary and treas-urer of the association, with a beautiful silver card receiver bearing a suitable inscription.

Among those present at the convention were:

- Angelica, N. Y.—C. L. Lathrop and wife.
 Baltimore, Md.—Charles Selden.
 Boston, Mass.—A. N. Bullen, E. A. Smith, S. A. D. Forristall.
 Buffalo, N. Y.—L. M. Hemenway, H. C. Stephen.
 Canton, Ohio.—B. B. Baughman.
 Chicago, Ill.—G. W. Dailey, John L. Davis, wife and son; P. W. Drew and wife; A. G. Francis, wife and two sons; J. C. Kelsey, W. W. Ryder and wife; F. H. Van Etten, E. W. Vogel and wife; Archibald Wray.
 Cleveland, Ohio—G. C. Todd and wife.
 Dayton, Ohio.—W. E. Hinman.
 Decatur, Ill.—Jos. P. Church and wife.
 Denver, Colo.—E. E. McClintock.
 Detroit, Mich.—E. H. Millington.
 Indianapolis, Ind.—C. S. Rhoads.
 Kansas City, Mo.—R. L. Logan and wife; Val B. Mintun.
 Lexington, Ky.—W. S. Melton and son.
 Lincoln, Neb.—V. T. Kissinger and wife.
 Los Angeles, Cal.—I. T. Dyer.
 Minneapolis, Minn.—L. H. Merrill.
 Montreal, Que.—W. W. Ashald and wife; W. J. Camp, wife and daughter; Frank Camp, L. S. Humes, L. B. McFarlane and wife; S. B. Kramer, Thos. Rodger, wife and daughter; George T. Rooke, James Kent and wife.
 Newark, N. J.—L. C. Hall.
 New Haven, Conn.—F. E. Clary, N. E. Smith.
 New York—W. F. Crowell, H. D. Crouch, A. P. Eckert and wife; L. B. Foley and wife; J. J. Ghegan, wife and daughter; E. P. Griffith, wife and daughter; W. E. Harkness, B. A. Kaiser, Howard E. Merrell and wife; Wm. Maver, Jr., wife and daughter; F. H. Reed, F. G. Sherman and wife; J. B. Taltavall, wife and daughter; A. B. Taylor and wife; R. D. Brixey, P. W. Miller, John Langan, George L. Foote, M. E. Launbranch.
 Oil City, Pa.—F. G. Bover and wife.
 Omaha, Neb.—W. P. McFarlane, J. B. Sheldon.
 Philadelphia, Pa.—J. B. Fisher, J. O. Oliver, Geo. F. Wiley.
 Pittsburg, Pa.—F. M. Brown, G. A. Cellar, G. A. Dornberg, G. E. Lawlor.
 Portsmouth, Va.—W. F. Williams, wife and two daughters, and Misses E. N. and Jane Neely.

Reading, Pa.—C. M. Lewis.
 Richmond, Va.—J. S. Stevens.
 Roanoke, Va.—W. C. Walstrum and daughter.
 Rochester, N. Y.—Chas. E. Hague and wife;
 E. C. Lewis and wife; H. C. Slein, S. R. Wright
 and wife.
 Salt Lake City, Utah—B. F. Frobes and wife.
 St. Albans, Vt.—M. Magiff and wife.
 St. John, N. B.—P. W. Snider and wife.
 St. Louis, Mo.—E. A. Chenery and son; N. R.
 File, H. D. Teed.
 St. Paul, Minn.—Geo. Boyce, E. E. Dildine.
 Sudbury, Ont.—F. T. Jennings and wife.
 Syracuse, N. Y.—B. H. Shepard, S. L. Van Akin,
 Jr., and wife.
 Toledo, Ohio—Wm. Kline.
 Toronto, Ont.—I. McMichael, W. Marshall.
 Valparaiso, Ind.—G. M. Dodge and son.
 Wilmington, N. C.—W. P. Cline, wife and
 daughter.
 Winnipeg, Man.—A. Hatton, R. N. Young.

EXHIBITS AND EXHIBITORS.

The Western Electric Company had on exhibition a complete line of telephone equipment for use in railway service. This included special transmitter arms to be used in connection with train despatching, besides other telephone equipment for use in conjunction with such service. Then there was a full line of composite telephones, such as wall sets, portable sets and line poles; also weather-proof wire pole telephone sets, besides portable car sets for regular telephone lines. In addition to this a complete collection of telegraph equipment was displayed. The Gill and Burlington selectors, both of which are sold by this company, and which were included in the display, were shown in operation. A very attractive feature of this exhibit was a large artistic sign beautifully decorated with small flags of all nations, showing the countries where Western Electric apparatus is used. The Western Electric Company was represented by W. E. Harkness, sales engineer, and M. E. Launbranch, engineer, of New York; C. L. Howk and H. C. Currier, engineers, of Chicago.

The United States Electric Company, of New York, gave its exhibition in connection with that of the Western Electric Company, showing the most recent adaptations of the Gill selector to the telephone in train despatching. It consisted of an entire telephone selective apparatus for a despatcher's office and the associated station equipments. This outfit, which is the one now in actual use on the New York Central, Canadian Pacific, Lake Shore and Michigan Southern, and several other railroads, is so arranged that the despatcher can call automatically any station at will on the circuit and get an automatic answer back in seven seconds. A further exhibit was made of the Gill selector showing its adaptation to high speed multiple calling. This comprised twenty-four station equipments with a train despatcher's automatic calling device, consisting of a case contain-

ing twenty-four push buttons and an automatic signal call box to operate the same. The despatcher, when calling, first presses the buttons corresponding to the station or stations he wishes to call, the automatic signal is then set in motion and any or all stations desired are called by one operation. By this method any one of the stations can be called in from one to six seconds, and all of the twenty-four stations can be called in eighteen seconds. This method recommends itself particularly wherever it is desirable to call several stations together to issue train orders. This company was represented at the convention by Edwin R. Gill, the inventor of the Gill selectors; Harrison Osborne, secretary, and Howard E. Merrell, the general manager.

It will not be out of place to state in this connection that the Canadian Pacific Railway's telegraph have installed at every test office on their system a Gill telegraphic selector call. At Greenville Junction, Me., recently, where one of these instruments is installed, a couple of burglars attempted to loot the station, evidently knowing that \$16,000 had been deposited there that day. They overpowered the night operator and proceeded to blow off the outer door of the safe with nitro-glycerine. In the meantime the despatcher at Brownville Junction, thirty-three miles away, had been steadily calling Greenville. Being unable to raise that office, he sent in the combination for the Gill selector, to which is attached a loud vibrating bell. This alarmed the burglars, who imagined it was some kind of a burglar alarm signal and immediately decamped without obtaining the \$16,000, although two minutes more work would have secured it.

The exhibit of the Stromberg-Carlson Telephone Manufacturing Company, of Rochester, N. Y., presented a well-arranged operating display of their selective alarm telephone despatching system. The apparatus for a complete despatcher's office located on one side of the room was connected up as in regular practice with five complete equipments representing local stations as placed on a division of a railroad of any length. A feature that was not instantly appreciated by visitors unfamiliar with this equipment was that this system operated its selectors on a common battery circuit, requiring a pressure of only .15 of an ampere. The telephone instruments shown with this particular selective equipment were of the local battery type as recommended for this service. This system embraces a telephone line and has superimposed on this line selective devices in a manner similar to the application of telegraph signals of the simplex type, provision being made for applying the signaling mechanism and operating the same without interference with the telephone conversations.

The Stromberg-Carlson Company was represented at the convention by H. C. Slein, S. R. Wright, Charles E. Hague and E. C. Lewis.

The Sandwich Electric Company, of Sandwich, Ill., was represented by H. O. Rugh and J. A.

Rugh. Their demonstration consisted of the well-known Sandwich telegraph, with telephone train despatching equipment, operating in conjunction with the No. 2 Sandwich selector. The important feature of maintaining a means of communication during circuit failure was efficiently demonstrated and met with general approval.

Mr. J. J. Ghegan, president of J. H. Bunnell & Co., Inc., of New York, manufacturers of telegraph apparatus and appliances, dry batteries, etc., distributed a beautiful souvenir book of views of Montreal, which was very acceptable to the visitors and one which will be preserved as a memento of their trip to the Canadian metropolis. Mr. Ghegan expressed himself as delighted with his visit, which enabled him to renew many pleasant friendships as well as to acquire a number of new ones.

The Railroad Supply Company, of Chicago, was represented by Mr. E. W. Vogel, signal engineer. The company had a very interesting exhibit of the Chicago crossing signal. The exhibit shown by Mr. Vogel was a miniature signal, complete in all its details and equipped with a Chicago automatic cut-out, which makes it entirely practical to instal track-circuit crossing alarms at crossings adjacent to stations. By the use of this device the alarm will not ring unnecessarily and thus make a nuisance of itself when locals are standing on the track-circuit doing switching or other work. The company also exhibited its line of lightning arresters, styles A, B and C, which are of the choke-coil pattern and which are designed to be put in series with the instruments to be protected. These arresters are furnished with or without fuse. The fact that there are over 250,000 of these arresters in actual daily service on telegraph and railway signal lines proves their usefulness. The company also had on exhibition a new style of lightning arrester, which is termed the style F arrester. This arrester is entirely new in principle and embodies several advantageous features. Although small and compact the arrester presents between 700 and 800 sparking gaps to the ground terminal, which is made from a non-fusible material. The distance between the spark gaps and the non-fusible ground terminal is between $5/1000$ and $8/1000$ ", from which it will be seen that the arrester will break down at a voltage of between 700 and 1000. The ground centre being non-fusible prevents the usual trouble with lightning arresters of metallic parts fusing together when a lightning discharge takes place. The material of which the ground centre is made can be furnished in any desired resistance so that if for any reason a ground takes place, the resistance offered to the usual working currents will be high enough, so as not to interfere with their work. The arrester is so designed that all parts are in plain view and can be instantly taken apart for inspection without opening or grounding any lines. The arresters are mounted upon slate or porcelain bases, and as they are equipped

for use with or without fuse, it is entirely practical to use same in series or in multiple.

Mr. C. K. Woodbridge, representing the Yetman Typewriter Transmitter Company of North Adams, Mass., was present and explained the merits of that transmitter. He demonstrated that every Morse signal sent on the wire could be recorded in typewriting and a permanent file of all telegraph work kept intact. Mr. E. E. Fitch, of Boston, an old railroad operator, used the combined machine typewriter and telegraph with its attachment for railroad work.

Mr. Richard D. Brixey, son of, and general manager for, W. R. Brixey, New York, manufacturer of the well-known Kerite wires, was present at the convention, accompanied by Percy W. Miller of his office. Mr. J. V. Watson, president of the Watson Insulated Wire Company, of Chicago, the Western representative of the Brixey concern, was also present.

Mr. George L. Foote, of Foote, Pierson and Company, New York, was an interested observer of the selector exhibits, the Hulit selector, manufactured by his firm, furnishing a conspicuous example of this style of instruments. He was glad to renew old acquaintances.

Mr. John Langan, of the Okonite Company, New York, manufacturer of the well-known wires, tape, etc., bearing that name, was in attendance at the convention, as is his habit.

The L. M. Ericsson Telephone Manufacturing Company, of Buffalo, N. Y., represented by L. M. and T. S. Hemenway, made an excellent display in their exhibit, which embraced a full line of the products of their manufacture.

Another exhibit was that of the Homer Roberts Telephone Company, of Chicago, in which the special features known as the "Roberts System," a development of that company, received attention.

Mr. Louis F. Wise, for several years manager of the Western Union telegraph office in the Chamber of Commerce, Minneapolis, Minn., has been promoted to the management of the main office in that city, vice J. E. McCann, resigned. Mr. W. J. Durand, who had a former residence in Minneapolis, but who for several years past was manager at Watertown, S. D., has been appointed manager of the Chamber of Commerce office to succeed Mr. Wise.

Reference was made a short time ago to the reckless cutting of an underground cable in England. A counterpart occurred at Oakland, Cal., recently, when an Italian ditch digger cut a main eastern telegraph cable at that place, for the time being largely impairing communication with the rest of the United States. The cable was incased in a lead pipe five inches in diameter, but to the workmen it might as well have been a log of wood. One of them took a good long swing with his pickax and instantly one hundred wires were cut.

Despatching Trains by Telephone.*

BY W. W. RYDER,

Superintendent of Telegraph, Chicago, Burlington and Quincy Railroad.

The proposition of substituting the telephone for the telegraph in the handling of trains has in the past been the subject of much discussion.

The electric interurban roads early recognized the desirability of this means of communication for the purpose mentioned, and as the number and speed of their trains and the weight of equipment increased, necessitating a more exact method of despatching, they extended their use of the telephone until it is now recognized by them as the standard method of operation. The steam roads, however, with their ultra-conservatism, were loath to part with the long-established telegraph, and, while a little experimenting has been done from time to time in a very small way, it is only recently that the use of the telephone for this purpose has been attempted on a sufficiently large scale to secure a fair demonstration of its possibilities. The immediate incentive for these experiments was the near approach of the date for the enforcement of the Federal nine-hour law, coupled with the well-defined shortage of telegraph operators that had existed for two or three years.

The first experiment on the Chicago, Burlington and Quincy Railroad of handling trains exclusively by telephone was begun on December 11, 1907, on the portion of the main line between Aurora and Mendota, a distance of forty-six miles. Eleven offices were cut in on this circuit. The result was so satisfactory that the construction of another circuit from Aurora to Galesburg, one hundred and twenty-five miles, with sixteen offices, was immediately authorized to handle the despatching between Mendota and Galesburg. This circuit was completed January 24, 1908, and has been in use regularly since that date. On March 1, 1908, the third telephone circuit was completed. This extends from Clyde, the end of the Chicago terminals, to Aurora, a distance of twenty-eight miles, with fifteen offices. These three circuits are all on double track. On March 19, the first installation on single track was completed between Aurora and Savanna, a distance of one hundred and six miles, with twenty-three offices.

Up to this time, while many who personally investigated the matter were willing to concede its efficiency as applied to double track operation, they were very skeptical as to what would be the result on single track. In this distrust they overlooked the fact that in our method of double track operation, the irregularity of reverse movements in reality made the requirements on such lines more exacting than on single track, where opposing movements were perforce the regular method of operation. The results of this last installation

were even more marked than on double track, and I am convinced that the handling of trains by telephone is not only much more satisfactory, but is really safer as well, and this opinion is shared by all who have personally looked into the matter.

Believing that the best was none too good for a train wire, we have in each case, with the exception of the Clyde-Aurora circuit, strung two 210-pound copper wires and have made the installation as complete and perfect as we know how. With the present market price of copper, the telephone circuit costs approximately \$100 a mile and the station equipment about \$50 per station. This is more expensive than the telegraph circuit, and the maintenance will be a little more difficult and the cost a little higher, but the results have proven so absolutely satisfactory, we feel the additional expense is fully warranted.

Our arrangement makes the circuit entirely self-contained, that is, the signaling and talking is all done on the same pair of wires. The signaling is done by semi-automatic selectors that enable the dispatcher merely by the depression of a couple of buttons in connection with a series of synchronous clocks to ring at will vibrating bells in one or more offices on the circuit. This is a much less laborious method of calling, and we also find a very great saving in time, the operators responding very much more quickly than is the practice with the telegraph. In the local offices we put a four-inch vibrating bell, one large enough to be heard at a considerable distance, and when this bell lets go without any preliminary warning, the one thought of the operator is to shut it off and so he immediately answers the call. More often than otherwise the operators to avoid annoyance of the signal bell forestall the dispatcher's call and report trains as soon as they pass.

In handling orders, the same general methods are observed as with the telegraph, any figures or names of stations occurring in the order being spelled out by letter, both in the giving of the order and all of the repetitions, and the name of the conductor on a "31" order is spelled out as well. The use of the telephone is so quick in every way, and so much more flexible, the dispatcher is enabled to get far more detailed information of just exactly what each train is doing, even, when occasion requires, talking directly with the conductor or engineer personally, and is thus brought just so much nearer the actual details of train movement. Only a personal investigation of the scheme can show how valuable is this information.

There has also been a marked improvement in the working of the men on these telephone circuits due to the fact that the conversations between the dispatcher and the operators or other employes are of a much more personal character than obtains with the telegraph, resulting in much closer co-operation. It is even possible to save considerable time in the actual putting

*Read at the convention of the Association of Railway Telegraph Superintendents at Montreal, Que., June 24-27, 1908.

out of orders. The despatcher copies the order in his order book as he talks it off, thus gauging, or rather reducing, his speed of conversation to his ability to write it down, as well as the ability of the operators to do so. Then when the operators repeat the order, they talk it off as fast as they can or much faster than is possible by telegraph.

The change in method in every case was made without a hitch and without any opposition worth mentioning. I had an idea that while possibly the despatchers themselves might not openly oppose the change, their support might be of a passive character, but in this I was agreeably disappointed. The first circuit had not been in operation a week before a little spirit of jealousy was evidenced, directed against the despatchers on the telephone circuit, it being so clearly evident they had the "snap" of the office. Soon all the despatchers in the Aurora office were desirous that we give them the same facilities, and, now that all have been taken care of, there is not one of the twelve that would willingly go back to the old method.

It is far easier to educate telephone operators than to secure telegraphers. There is hardly a town anywhere on the line in which there are not young fellows, who by reason of their frequently being around the depot, are more or less familiar with the railroad game, and who with a very little training would be perfectly competent to sit in as a telephone operator. There is much to be gained by making use of men in their own home towns, or who have grown up along the line. Our telegraph service was at its best when this condition existed to a considerable extent, and discipline has lessened in proportion, as we have been compelled to import telegraph talent.

This increased use of the telephone has also opened an avenue whereby we can offer better employment to those unfortunately injured in our service, few of whom in the past have been able to learn telegraphy. Another item worthy of consideration is the broadened field from which we can make despatchers. In the past, the first requisite for a despatcher was an ability to telegraph, and with the character and ability of telegraphers in general dropping as fast as it has during the past two or three years, we certainly can but expect difficulty in the future in getting satisfactory talent, even if this difficulty has not been greatly in evidence in the past. I maintain that a good, bright, young freight conductor, who has been actually carrying out the train orders, would make a better despatcher himself and be better able to assist in getting other trains over the road than is the telegraph despatcher, who, in spite of his occasional trips on freight trains, is a theorist after all.

The establishment of telephone circuits enables us to close unimportant offices wholly or a portion of the time, as a telephone instrument can be placed where the train conductors can readily get in touch with the despatcher, and report their trains into clear or get help if necessary.

Another important feature in the use of the telephone is the fact that it works even better in bad weather than in good—just the reverse of the telegraph—and if there is ever a time when good service is needed, it is when the weather is wet and foggy. There is no exasperating interference with the despatcher's efforts by reason of the relay in some way office being out of adjustment and the inattentive operator making no effort to see whether this is the case or not. The telephone is always in proper adjustment, and because of the lowered static capacity of the circuits, works as if charmed. With the telephone, it is possible to arrange apparatus, for instance, in the superintendent's office, so that he can at any time listen to the actual work of the despatchers and operators and thus check up any tendency to slackness. This has not always been possible in the past, as not all superintendents were telegraphers.

The improvement in the handling of train despatching by telephone has been so clearly demonstrated, we have decided to attempt to handle other messages in like manner and in a short time all business for the way offices on certain portions of our line (both main and branches) will be handled by telephone, this to include Western Union telegraph business as well. At junction points where branch telegraph lines are to be worked and at certain wire test offices, it may be necessary to maintain telegraph service, but at all other points all classes of business will be handled by telephone.

The field for substituting the telephone for the telegraph daily opens up before us almost faster than we can comprehend it, and the results we are obtaining from our experiments are a constant but very agreeable surprise. For instance, only a short time ago it seemed next to impossible to get satisfactory telephone service on single wire branch lines without completing the metallic circuit and this the volume of business did not warrant. However, latterly we have made successful substitution on two branch lines, one eighteen miles long with three offices, and the other forty-nine miles long with ten offices. These branch wires have been so arranged that while not connected permanently with the main line, they can be connected automatically at the will of the despatcher or the way office operator, the signaling on the branch being done by means of ordinary bridged bells.

The unqualified success of our experiments with the telephone as a substitute for the telegraph, and the rapidity with which other roads are extending the work, convinces me that the next few months will witness a great change in method of handling trains all over the country, one that will greatly benefit the service.

Roads using telephone for train despatching and mileage covered by this service, either in actual operation or authorized, are: Illinois Central, 2,536; Chicago, Burlington and Quincy, 746; Chicago and Northwestern, 478; Chicago, Rock

(Continued on page 456.)



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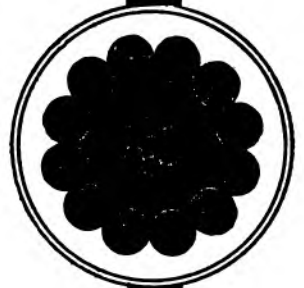
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Western Representative
WATSON INSULATED WIRE CO.
Railway Exchange, Chicago, Ill.

NEW YORK

(Continued from page 453.)

Island and Pacific, 333; Michigan Central, 259; Chicago, Milwaukee and St. Paul, 223; Great Northern, 202; Northern Pacific, 109; Baltimore and Ohio, 105; New York Central, 95; Lake Shore and Michigan Southern, 88; Delaware, Lackawanna and Western, 62; Wheeling and Lake Erie, 60; Canadian Pacific, 49; Pennsylvania Railroad (Lines East), 225; Lake Erie, Alliance and Wheeling, 104; a total of 5,674 miles.

The two latter are branch lines operated by bridged bells and hand generator signaling.

The Telegraph at the Chicago Convention.

Considerably more business was handled by the two telegraph companies at Chicago during the convention just closed than passed over the wires at the last convention at the same point and which resulted in the renomination of Theodore Roosevelt.

The Western Union Telegraph Company during the eight or nine days, inclusive of and preceding the days of the convention, took care of about 3,000,000 words of newspaper matter. That is to say, the newspapers of the country filed with the Western Union approximately 400,000 words of news about the convention every twenty-four hours.

The bulk of the business, of course, was mostly for the morning newspapers of the country and was placed on the wires between 8 and 12 o'clock at night, Chicago time.

The business of the Postal Telegraph-Cable Company during the same time averaged about 300,000 words a day. The two companies therefore passed over the wires about 5,500,000 words.

This was for the newspapers exclusively. It does not include private messages, market reports or press association material. Nor does it include either the regular news dispatches or the materials sent by The Associated Press over that concern's leased wires, which averages possibly 50,000 words every twenty-four hours.

As far as can be learned Thursday, June 18, was the busiest day of the convention period, for the telegraph companies. In the twenty-four hours ended at two o'clock Friday morning they probably handled nearly 1,000,000 words between them. The business on the other days had fluctuated considerably. The exact figures, if they could be obtained, would doubtless show some remarkable differences.

Practically all of the press matter that was sent out by the convention was despatched from the Auditorium and the Auditorium Annex, being conveyed by messenger boys to the main offices of the two telegraph companies.

Almost all the business was done in the United States, the despatches being sent direct to their destination.

New York newspapers got during the convention about 150,000 words a day.

Of course, the handling of so much extra business entailed the employment of many extra op-

erators and messenger boys. In the offices of both companies nearly all of the operators worked in double shifts. Notwithstanding the tremendous amount of business, the companies were able, it appears, to do even better when it came to a pinch.

The desirability of Chicago as a place for convention, according to the telegraph companies, is that it is so central, and that it eliminates from their calculations the second largest city in the country, which handles the convention as a local affair. At Denver the conditions will be much harder. Denver, being off the main line, has not the trunk lines that Chicago, St. Louis and Kansas City have. Then, too, many messages for points east of Chicago have to be relayed. Furthermore, the Chicago newspapers will have to be supplied, and as the volume of business that goes to them is very great, this is a very important consideration.

The Old Timers and Military Telegraphers.

The circular announcement of the twenty-seventh annual reunion of the Old Time Telegraphers' Association and the Society of the United States Military Telegraph Corps has made its appearance. The dates of the meeting will be September 16, 17 and 18, the point of assembling Niagara Falls, N. Y., at which place the Cataract-International Hotel will be the appointed headquarters. As has been stated previously, this coming reunion will be a fulfilment of the deferred plans by the same hold-over committees appointed for last year, postponed at that time because of the unsettled condition in telegraph circles owing to the strike.

A programme thus far prepared for the occasion provides for the holding of a business meeting of the United States Military Telegraph Corps at the hotel at ten o'clock on the morning of Wednesday, September 16, to be followed at one o'clock by a similar meeting of the Old Time Telegraphers. In the afternoon the noted power plant at this point will be inspected, and a visit made to the manufactory of the Natural Food Company, where a "demonstrative" lunch will be served. In the evening a reception will be held in the ballroom of the hotel. On Thursday morning, the 17th inst., the visitors will take a trip over the Niagara Gorge belt line, for which special cars will be provided. This trip will be supplemented in the afternoon by an automobile ride around Goat and Three Sister islands and through the State Reservation Park, while in the evening there will be a vaudeville entertainment and smoker in the court park of the International Hotel. The programme arranged for Friday, September 18, will be announced later.

The officers of the Old Time Telegraphers' and Historical Association are: H. D. Reynolds, president, Buffalo; George A. Burnett, vice-president, Buffalo; I. McMichael, vice-president, Toronto, Ont.; George F. Macdonald, vice-president, Ot-

(Continued on page 460)

The Gill Selector



THE GILL SELECTOR
SIZE 6 X 3 1-2 X 3 1-2 INCHES

FOR Train Despatching

The Gill Selectors may be attached to a telephone or telegraph circuit so that the despatcher may call any station or group of stations. A signal is automatically given to the despatcher when the station receives the call.

The operation is extremely rapid, requiring only a few seconds.

The Gill Selector is now used by many of the largest railroads in the United States and Canada and has proved absolutely reliable in actual service.

The installation and operation of the selectors does not prevent a high grade of telephonic transmission, nor interfere with regular telegraph service.

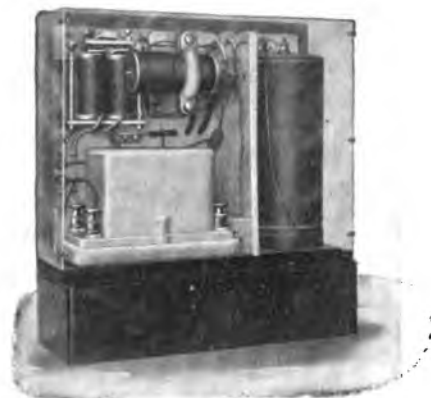
They have many advantages which allow them to be used even if the line is in trouble.

The instruments may be rented or purchased at very reasonable prices.

Write us for full information.



AUTOMATIC CALLING DEVICE FOR
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Railway Composite System for Telephoning Over Telegraph Lines



To meet the demand of railway companies for a scheme whereby their existing telegraph lines may be used for telephone service, we have developed a complete line of apparatus.

Different methods are employed according to the service that is required. The railway composite system is very popular where it is desired to secure one telephone circuit for several stations from one grounded telegraph line. With this system the telephone apparatus may be added to the line without changing or rewiring the telegraph instruments. The apparatus is simple and gives splendid transmission.

Western Electric Quantity
means Low First Cost

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means Low Maintenance Cost

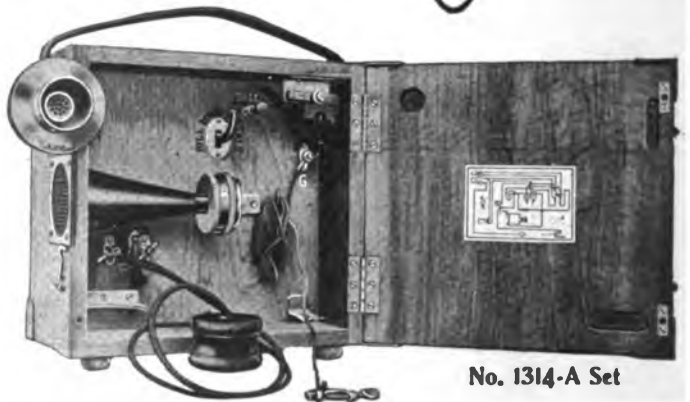


No. 1312-A Set

The No. 1312-A telephone set is for use at a permanent station.

The No. 1314-A telephone set is portable so that it may readily be carried on a train. Connection can be made with a composited telephone and telegraph line by means of the jointed pole and 100-foot cord, shown in the illustration.

Our Bulletin T-206 gives complete information on the installation and maintenance of these telephones for railway service. This will gladly be sent free upon request.



No. 1314-A Set

WESTERN ELECTRIC COMPANY

EASTERN
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Philadelphia
Boston
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CENTRAL
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Indianapolis
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Manufacturers and Suppliers of all Apparatus and Equipment used in the Construction, Operation and Maintenance of Telephone Plants

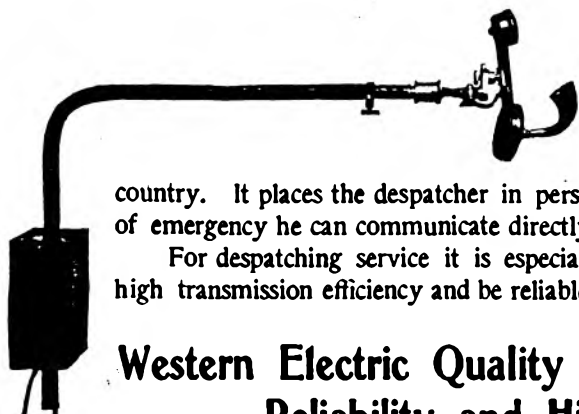
WESTERN
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Write our nearest house.

Train Despatching by Telephone Rapid and Accurate



FOR the handling of trains the telephone surpasses all other means of communication. It is no longer an experiment, but is now used by some of the largest railway systems in this



country. It places the despatcher in personal touch with the operators at all times. In cases of emergency he can communicate directly with the train crew.

For despatching service it is especially important to select apparatus which will have a high transmission efficiency and be reliable under all conditions.

Western Electric Quality means Reliability and High Efficiency

The Transmitter Arm shown in the upper illustration is designed to meet the requirements of the men at the stations. The transmitter and receiver are adjustable and the arm is so arranged that it does not interfere with the vision and leaves both hands free while taking orders.



No. 234 Transmitter

The No. 234 Chest Transmitter in connection with the No. 128 Receiver is especially adapted for use by the despatcher. It enables him to move about freely while handling his train sheets.



No. 128 Receiver

We have a staff of engineers who are making a special study of telephone service for railway companies and we will gladly give you the benefit of their experience, and advise you of the apparatus best suited for your requirements.

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WRITE OUR NEAREST HOUSE

(Continued from page 456)

tawa, Ont., and John Brant, secretary and treasurer, 195 Broadway, New York.

The officers of the United States Military Telegraph Corps are: Colonel William B. Wilson, president, Holmesburg, Philadelphia, Pa.; William L. Ives, vice-president, New York, and David Homer Bates, secretary and treasurer, 658 Broadway, New York.

In regard to the question of transportation, which in former years has been so generously extended by the railroads to the telegraphers, John Brant, secretary of the old timers, and who is also the chairman of the committee on transportation, says in his circular: "The operation of the Interstate Commerce law prohibits the issuance of free transportation by the railroad companies in the United States. Owing to the uncertainty of the railway situation nothing can be promised at this time regarding reduced rates. When definite information is obtained in this respect applicants will be notified."

New Western Union Office at Springfield, Mass.

The new office of the Western Union Telegraph Company, at Springfield, Mass., is a model in its way. Under the direction of John E. Jenkins, of New Haven, Conn., inspector of the district, there has been installed a new switchboard of three sections (150 straps), new repeater table with eight sets of repeaters; two new sextette tables; one octette table for operators; two new quads, one to New York and one to Boston. A mercury arc rectifier was also installed to operate the ten motor dynamos and at the same time charge a bank of storage battery for a reserve. It not being possible to get direct current at the new office location, a mercury arc rectifier of forty-ampere capacity was installed to change the alternating current to the proper direct voltage. The American District Telegraph Company has also installed a new equipment in its portion of the office with new up-to-date burglar alarm apparatus. The office is under the management of Mr. B. A. Cratsley. Mrs. Sackett is the chief operator. Mr. H. S. Finney, general foreman of the American District Telegraph Company, had charge of the installation of the work of that department.

Business Notice.

The Yetman Typewriter-Transmitter Company, of North Adams, Mass., is filling an order for twenty transmitting typewriter machines for telegraph use in England. These machines are additional to the twelve that the company supplied some time ago for governmental use, the eminently satisfactory working of which lead to the receipt of these orders. It would thus appear that the Yetman transmitter is steadily gaining in favor in Great Britain.

Radio-Telegraphy.

The first wireless telegram received from any of the steamships plying across the Pacific ocean

came to the Victoria, B. C., station June 9, when the Japanese steamship Tango Maru reported from approximately three hundred miles off the coast of Vancouver Island on her way from Yokohama.

The English government has decided to ratify the Radio-Telegraph Convention. Germany has been notified of this adhesion of Great Britain, including all her dependencies except Newfoundland. The other countries which have to date notified adhesion are said to be Denmark, Norway, Roumania, Belgium, the Netherlands, Mexico and Sweden.

Communication between Mazatlan and San Jose del Cabo, Mexico, by means of wireless telegraphy, was set in working order at the beginning of the summer of 1907, when the installation of the lower California division was completed, the Mazatlan station having already been finished in the year 1906. The installation worked satisfactorily, although before it was accepted by the government from the contractors, the Gessellschaft fur drahtlose Telegraphie in Berlin (Telefunken system), the storm had wrecked both the iron towers in San Jose del Cabo. These towers have now been taken away and brought to Mazatlan and installed afresh.

The first annual convention of the Society of Wireless Telegraph Engineers was held June 1 at the residence of J. S. Stone, Boston Mass. This society was founded February 26, 1907, with charter officers as follows: J. S. Stone, president; Sewall Cabot, of Brookline, Mass., vice-president; C. K. Woodworth, of Brookline, Mass.; E. R. Cram and O. C. Ross, of Cambridge, Mass., managers; G. H. Clark, of Everett, secretary, and Dr. R. T. Wells of Somerville, treasurer. The election of officers for the ensuing year was attended with the following results: J. S. Stone, president; E. R. Cram, vice-president; E. A. Kolster, A. P. Browne and C. C. Kolster, of Boston and Cambridge, managers; C. E. Russell, of Somerville, secretary, and Dr. R. T. Wells, treasurer.

A correspondent writing to a foreign contemporary respecting the audibility of wireless telegraph messages which enables them to be read by outsiders, not necessarily from the sound of the spark, as has been held to be the reason, but because of the "brush discharge from the antennæ into the atmosphere," says further in discussing the subject: "I have noticed that in a 45-kw. station, where the spark was boxed up so that it was barely audible outside the room, the messages were easily readable at a distance of two miles from the station. At a distance of one mile the noise of the dots and dashes was much louder than just outside the spark room. While standing outside the station and directly under the antennæ, one would hardly notice the noise. Under certain atmospheric conditions at night the messages could be read by watching the glowing of the aerial wires each time they were charged by a dot or dash."

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That is because the voltage falls off with use and because the batteries waste energy when not in use.

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battery of the same size and working under the same conditions and its voltage is steady and constant until the elements are entirely consumed.

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There are Edison Batteries for all purposes. Write us your purpose and we will send complete information as to the type of cell you need, the number of cells and the cost.

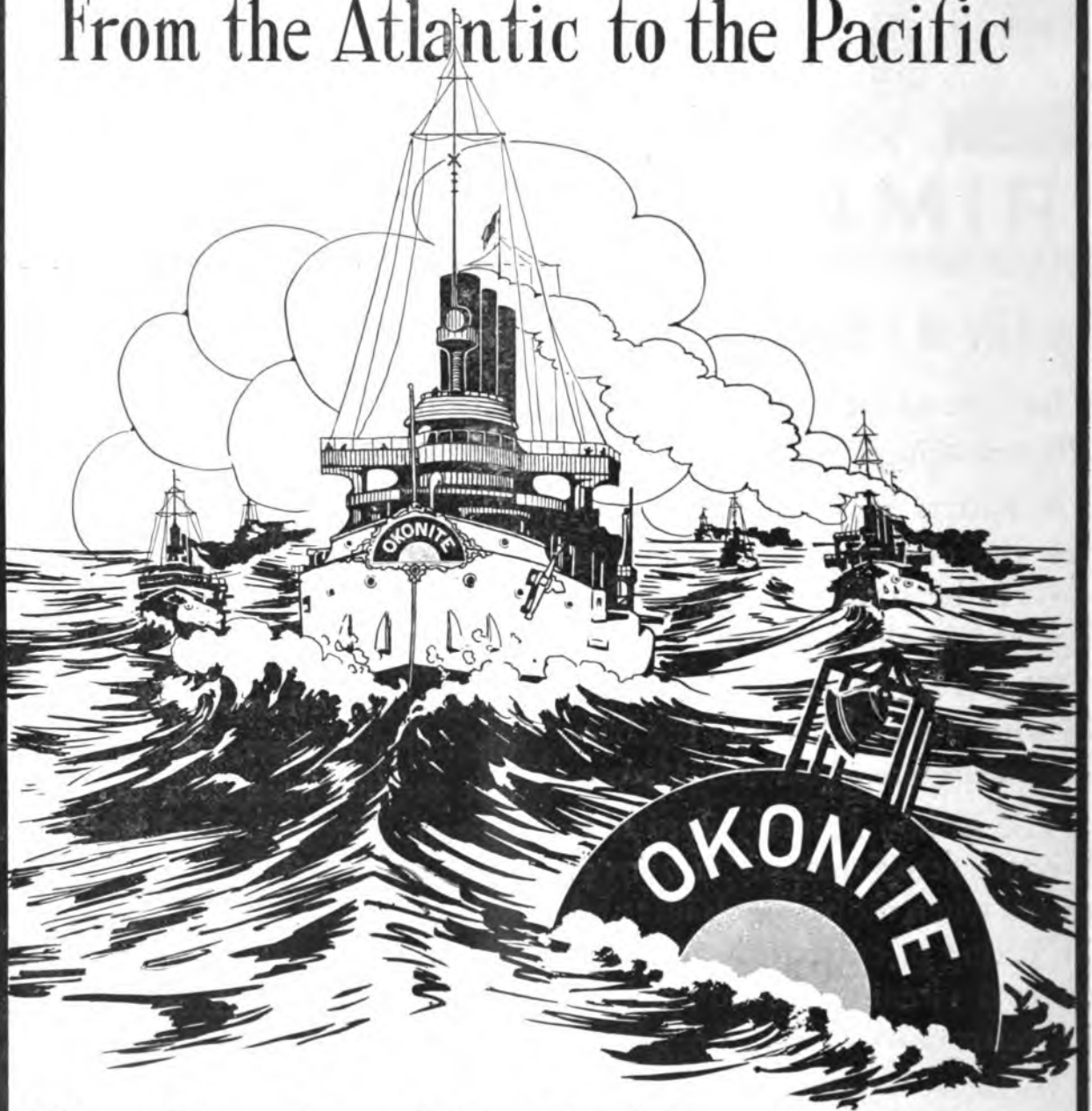
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Railway Telephony.*

BY W. E. HARKNESS,

Sales Engineer for the Western Electric Company,
New York.
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* * * * *

At the present time there are approximately 20,000 telephones in use for various purposes by the railroads. In 1902 there were 7,544 telephone stations for the same purpose. This will give some idea as to the development of railway telephone service during the past six years, and from present indications it would seem that this development will continue at a more rapid rate for some years to come. An example of the rapid development of railway telephone service is shown by the Pennsylvania Lines (east of Pittsburg) which in 1893 had a total of sixteen switchboards and comparatively few telephones, and to-day has one hundred and fifty switchboards and over 10,000 telephone stations in service, and has contracted for over 900,000 trunk calls with the various telephone companies.

Railway telephone service may be divided broadly into three classes: First, business with the public; second, business between their own departments and stations; third, business with other railroads and transportation companies.

The service rendered the public is one of the most important, as it not only affects the business of the railroads, but also that of the operating company through which the connections are established, and, unless properly supervised and the quality of the service maintained, it will react upon the operating company and be a continual source of trouble and expense.

One of the first uses of the telephone by the railways was in the offices of the departments which came in contact with the public. Direct exchange lines were used for this service; and the office with more than one telephone was the exception. The service rendered under these conditions was extremely poor owing to the congestion of telephone traffic which naturally resulted. The effect of this condition was not appreciated by the railways, as they did not come in contact with the general public, who could not understand why these lines were continually reported busy.

From personal observation the writer has seen calls for lines to freight and passenger offices delayed from half an hour to an hour, owing to the number of calls which were placed for these lines. This not only caused complaint from the public, but placed an increased expense on the telephone company. In many cases records were kept by the telephone companies showing the seriousness of this condition and the effect it had upon the railway business, and with this evidence attempts were made to get the railways to provide additional facilities. This method in some cases was successful, while in others it was looked upon as simply an effort to secure additional revenue from the railways.

* A paper read before the New York Telephone Society.

This state of affairs was largely due to the fact that there was no official who was responsible for the furnishing of adequate telephone service, each department head being the one who determined whether or not the additional facilities were necessary, and as a usual thing he did not know what actually was required nor did he consider it of very much importance. The introduction of the private branch exchange, however, placed the railway in a different position, as with this arrangement their private branch exchange operators were in direct touch with the public, received their complaints and observed the congestion on the various lines. The private branch exchange was usually placed under the superintendent of telegraph and in this way the responsibility of furnishing adequate facilities and first-class service were placed upon one particular department or official, who, owing to their other work, was particularly well adapted to handle the problem and realized the necessity of furnishing the highest grade of telephone service.

* * * * *

It is very apparent that the railroad mail service is necessary for the transmitting of written information and records which must be kept and need not be delivered with any great despatch, or if telegraphed or telephoned to their destination would cause unnecessary expense in both equipment and labor. The telegraph has been considered the only satisfactory method of sending information quickly and accurately between points on railroad systems.

The fact that a telegraph message is written by the sender and delivered in writing at the receiving point, thus giving a permanent record of the transaction, which could be used in case of differences arising in the future, is one of the reasons for the telegraph being used in place of the telephone in many cases, as it was believed by those using the telegraph that it would be impossible to transmit messages with the same degree of accuracy by telephone, owing to the similarity in the sound of some words and letters when transmitted by telephone. At the present time, however, this belief is undergoing some radical changes. It is not to be taken, however, that the telephone will replace the telegraph entirely for railroad service, for there are many classes of messages which can be sent by telegraph with sufficient despatch and with greater economy than if sent by telephone, or even by mail.

There is a tendency on railroads to send messages by telegraph which in many cases could just as well go by mail, and in this way cause a congestion of telegraphic traffic and increase the cost of telegraphic service. It would appear that the classification of the inter-department communications on railroads has not received the attention which is due to a matter of such importance, but the indications are that greater attention will be paid to this matter as the use of the telephone becomes more general, and the economies which may be effected by its use in its proper place are realized.

The distribution of the inter-department communications correspond in many respects with the distribution of the toll and long distance messages in telephone service. The greater volume being between places close together while the remainder is distributed among points at considerable distances apart. The ratio between the short and long haul communications will differ on various roads due to the organization and length of the road, number of trains and the material transported, so that each road must be treated as a separate problem when the best method of communication is being determined.

The following will give some idea of the various classes of service connected with the operation of railroads to which the telephone is being applied and in which it has proven superior to the telegraph. One of the problems which confronts the railroad companies operating large terminals or stations is the prompt and safe handling of a large number of trains entering and leaving these stations. The writer thinks that all who live in the suburbs have had at times some rather unsatisfactory experiences in this connection.

One of the first to use the telephone for handling the traffic in its terminal was the Terminal Railway Association at St. Louis, Missouri. In 1895 this road erected a new depot at St. Louis with some twenty odd tracks running north and south, all of which must be available to trains from the east and west. Further, all trains entering the station must back in. This arrangement necessitated the focussing of all the tracks in the depot at one point from which a number of tracks curved east and west to meet the main lines. This arrangement, as will be seen, presented a very complex system of switch movements to permit a train coming from either the east or west being switched to any of the station tracks, and, with the handling of heavy traffic, offered many opportunities for mistakes and delays in the passage of trains at the common cross-over.

Considerable difficulty was experienced in the operation of this terminal until the telephone was adopted. The scheme of operation used is as follows: A train director is located in the interlocking switch tower which is just beyond the cross-over. From his desk he can see all of the tracks entering the depot and also the main lines from the east and west. He is in connection with telephone lines extending along the main line for several miles in either direction, and receives over these lines the reports of the movements of trains as they come into or leave the yards. These reports are made by switchmen located at various points throughout the yards, who control the switches on the main line tracks so that by giving them instructions the train director can shift the incoming or outgoing trains on the various main line tracks at will before they have reached or after they have left the terminal. He is also able to clear the station tracks for incoming trains in sufficient time to permit them to enter without delay. He is connected with the depot master's office so that he can notify him of the arrival of

trains while they are still some distance from the depot and permit of the necessary shifting of the depot force to take care of them.

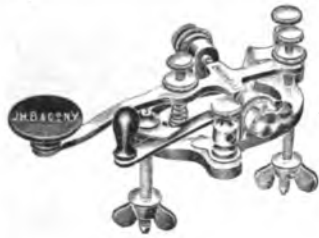
This connection also enables the depot master to stop any train leaving the station even after it has started as the train director can set the necessary stop signals before the train has left his control. The movement of all signals and switches in this terminal are under the control of the train director and are changed by the switchmen on his verbal instructions. In this manner over 700 trains a day were successfully handled.

The directing of trains at the other large terminals throughout the country are now being handled by telephone, the details of operation differing as the local conditions demand. By this method the movements are made with safety and despatch and a marked economy in the operation is effected.

Although the traffic in the terminals has been handled for years in a successful manner, it has not until recently been considered advisable by the officials of the larger systems to attempt to direct or despatch trains on the main line of a railroad by telephone in place of by telegraph. Before the introduction of the telegraph for railroad service the movement of trains was arranged according to a schedule. The roads, being single track, were provided with sidings at the various stations, and so arranged that trains running in opposite directions were scheduled to meet at certain points. The train reaching the meeting point first was expected to take the siding and wait the arrival of the train from the opposite direction. Owing to delays and accidents considerable time was lost by this method of operation. The story told about the introduction of the telegraph for this service is about as follows:

In 1850 a train on the Erie Railroad on board of which there happened to be an official of the road, arrived at its scheduled meeting point and was obliged to await the train from the opposite direction. As time passed and the other train did not appear, the official becoming impatient at the long delay, went to the telegraph office and wired the next station asking if the opposing train had passed. On receiving an answer that it had not, he wired the station agent to stop the train and have it wait until the arrival of the train from the opposite direction. He then asked the engineer to take the train to the next station, but found that he objected, as it was irregular and he had no faith in the means of obtaining the information, and not until he had commanded him to do so was the movement made. Upon arriving at the next station it was found that the opposing train had not yet appeared and the telegraph was again employed and the train moved as before.

This demonstration of the saving in time which could be effected by using the telegraph led to the system of rules and orders in connection with the despatching of trains by telegraph which is universally used to-day. This development has of course been gradual. At first conductors of



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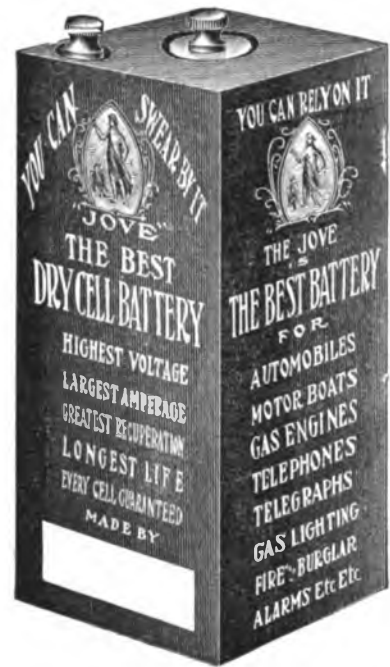
FRY SPECIAL KEY

For Open Circuit, Dry Battery, Telegraph System

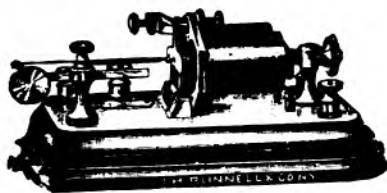
This key was specially devised for the purpose by Mr. U. J. Fry. Operators do not have to learn anything new in using it. The movement of throwing open the circuit-closer of the ordinary key is repeated in the Fry type and this movement puts the battery in position to transmit signals. The reverse movement, or closing of the circuit-closer, opens the home battery, but leaves the relay in position to receive signals. A further advantage of the Fry open-circuit key is that when the circuit-closer switch is in closed position the battery circuit cannot be closed by pressing down the key lever, hence there is no danger of wasting the battery by a book or other heavy article resting on the key knob.

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We are the only manufacturers duly authorized to use the Barclay patented improvements on telegraph instruments, and are the sole manufacturers of the Barclay Lightning Arrester and Protector.

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Dispatcher's Station.—The Master Station apparatus consists of a Magneto Portable Desk Telephone and Extension Bell Box—Master Selective Device or controlling switch—Recording Tape Device for designating calls repeated back from the station that has been signaled by the Master Selective Device.

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Last Station.—The 30th, 40th or 50th or Terminating Station in the railway division employs the same equipment as any other station, with the addition of a local terminal resistance.

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DISPATCHER'S
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THE OPERATION.

Speaking generally—the Train Dispatcher desiring to communicate with a Local Station Operator at some point on his division, merely inserts a plug in the Master Station or controlling device at the Dispatcher's Office and within a few seconds the Local Station Selector at the distant station, which he has selected, causes an alarm bell to operate. At the same instant the call is repeated back and registered at the Dispatcher's Office. A general alarm, ringing every station at the same time, may also be provided.

The Local Station Operator, quickly responding to the alarm bell, removes the telephone receiver and is at once in direct talking communication with the Train Dispatcher, receiving such orders or messages as the Train Dispatcher may have to impart.

No signal system approaches the Stromberg-Carlson Selective Alarm Telephone Dispatching System in positive results which produce safe operation—economical cost of installation and maintenance. Central Energy or common battery for operating the Selectors and local battery telephones for talking. No polarized relays—step by step mechanism—or delicate apparatus used. A system to do the work at the least maintenance expense. It is simpler than the Telegraph and combines numerous features that make it the most appropriate and reliable system invented.

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trains did their own despatching by sending messages to each other. Some roads in place of having regular despatchers left the issuing of orders to the superintendent or in his absence some other one person. What is known as the "single order" prevailed; by this is meant an order was issued to but one of the trains, directing it to await other trains at a certain point. This method occasionally led to "lap" orders being given to opposing trains and a wreck was the result. This trouble was overcome by the issuing of what is known as the "double order," which is the sending of the same order to each train concerned if possible at the same time. This method was universally adopted and is still being used.

The adoption by the various railways of a uniform system of rules, governing the movement of trains, has done much towards ensuring the safe and rapid handling of traffic. This system of rules was of course arranged to meet operating conditions and the transmission of the orders by telegraph. The use of the telephone for the same purpose is objected to on the score that it is not as accurate as the telegraph owing to the liability of misunderstanding due to the similarity of different words, letters and figures when transmitted by telephone. This objection, however, can be readily overcome, and, in fact, has been proven to be groundless, as is apparent when it is considered that the trains entering the large terminals have been successfully handled, and, further, that there are at present 213 roads operating nearly 18,000 miles of road which are using the telephone exclusively.

The Lake Erie, Alliance and Wheeling are operating their line of single track road for a distance of one hundred miles by telephone exclusively, and have been doing so for some years. This road handles a large coal traffic and their schedule covers thirty trains in each direction per day. There are twenty-four telephone stations along the line located at the various stations where orders may be given to the agent or train crews. All twenty-four stations are connected to the one telephone line and the signaling is accomplished by code ringing.

The low grade division of the Pennsylvania Lines between Columbia, Pa., and Parkesburg, that state, a distance of 38.4 miles, has been operated by telephone, supplemented by block signals, since August, 1906. The average number of trains handled daily on this section of the road is ninety-five and the average number of cars 4,800, transporting a total of 280,000 tons.

The arrangements for handling this traffic differs from those employed by the Lake Erie, Alliance and Wheeling. At each terminal of this division and at three intermediate points small cordless switchboards are located, to which are connected three classes of telephone circuits. One of these is called the "train director's wire," being a through circuit connected permanently into each of the five switchboards. Another circuit known as the "long distance emergency wire"

connects the switchboard at each end station with the one at the center of the division only.

The switchboards are also connected by lines extending from switchboard to switchboard, and to these lines are connected some twenty-five telephone stations located in booths at various points along the track. These lines are known as the "block wires." The train director is located at one end of the division and by means of the train director's wire can get in touch with the operators at the various switchboards and through them be connected to telephone stations on the block wire in either direction, and in this way get in direct communication with the train crews.

In receiving train orders by telephone, conductors and enginemen are required to go to the telephone, one to receive and repeat the order while the other one writes it down. After it has been received the one who writes it from the other's repetition must repeat it back, while the one who received it must underline each word as it is repeated, in this way giving a check on the order and ensuring the correct understanding of the order by both parties concerned. Regular carbon backed printed forms are provided in each booth for the writing of the orders so that a uniform method is used and a sufficient number of copies made.

In case a conductor wishes to reach the operators or the train director at any point along the line he can do so by using one of the telephones connected to the block wire and if necessary can be connected to the train director by means of the train director's wire or the long distance emergency wire. In both of these cases the same rules and orders governing the movement of trains are used as would be used if the telegraph were employed as a means of communication, the only difference being that the telephone is used in place of the telegraph. It will be contended, and probably correctly in some cases, that these methods of operation, while capable of handling the traffic on roads of this class, will not meet the conditions existing on other roads. However, in the past year considerable attention has been given to this matter by railway officials throughout the country, and it has been found possible to use the telephone successfully in place of the telegraph on the main lines of some of the largest roads.

The first installation of this kind was that on the main line of the New York Central between Albany and Fonda, New York, a distance of about forty miles. This has been in operation since October, 1907, and it has never been necessary to resort to telegraph service during this time, even with the telephone circuit in trouble.

The line used is a metallic circuit of 210-pound copper wire and connection is established with sixteen stations along the section. Special signaling devices are used on this circuit which enables the despatcher, located at Albany, to call any one station without calling the others, or

while talking to one station he may call another without interfering with the conversation. These selectors are operated by a relay of low impedance connected in series with the line, and are arranged to close a local bell circuit when operated by a combination of electrical impulses sent out over the circuit by the despatcher. The despatcher is furnished with a set of automatic calling keys, one for each station on the line, so arranged that the proper combination of impulses will be sent out over the line to operate the various selectors.

The selecting current, supplied by a grounded battery located at the despatcher's office, is applied to the neutral point of a bridged impedance coil and the current is completed to ground at the distant end of the line through another impedance coil similarly connected. In this way stations can be called while a conversation is being held on the line without interference from the signaling current impulses.

Further as has been demonstrated in practice, the stations on one side of the circuit may be signaled in case one side of the line should open and conversation can even be carried on with the stations with the line in this condition.

This illustrates one of the great advantages of the telephone over the telegraph, namely, that even though the line may be in trouble, conversation can be carried on over a line which if used for telegraph would be entirely out of service.

The selection of any station is done in about eight seconds and the local bell circuit closed by the selector remains closed until the operator answers the call by closing a key. The arrangements are such that the despatcher receives an automatic answer back signal from the station called. This signal is given by the bell at the station so that if the answer back is received by the despatcher there can be no question as to the ringing of the bell at the station.

The despatcher is equipped with a chest transmitter and a head telephone. The transmitter circuit is normally open and his receiver is bridged across the line at all times. In this way he can be reached instantaneously by any operator coming in on the line. A key for closing the transmitter circuit is provided and also one to connect a howler signaling circuit to the line. This latter being used when stations fail to disconnect their sets from the line after finishing their conversation.

The stations are equipped with special telephone sets consisting of a special desk arm to which is secured a special hand set, somewhat similar to the one used by telephone linemen, together with the usual induction coil and batteries. A key for closing the transmitter circuit is also provided. The special equipment was necessary owing to the fact that the operators in the stations were obliged to attend to the switches and signals and to do this properly should not be obliged to have to bother with a head telephone; further, by having the relative positions of the transmitter and receiver fixed, it was be-

lieved that better transmission would be obtained as the operator is obliged to hold his ear to the receiver to receive his orders, and when in this position he has the transmitter directly in front of him.

In issuing orders over this circuit the general rules governing the movement of trains previously given are followed. The despatcher calls the various stations desired by operating the automatic keys and as each man answers his call he is told to prepare to take an order. The order is then given by the despatcher word by word and written out by the operators. The despatcher writes the order word for word as he issues it to the operators and in this way prevents too rapid dictation and ensures the accuracy of his own record. It is then repeated back by each operator, and as each word is repeated back the despatcher underscores it in his book. The underscoring is done each time the order is repeated by the different operators so that if the order is issued to three operators and properly repeated by them, each word in the despatcher's book will be underscored three times.

It may be well at this point to state that the check on telegraphic train orders is usually done by an operator other than the despatcher who copies all the orders as given by the despatcher and repeated by each operator.

(To be continued.)

The World's Telegrams.

The Bureau International des Administrations Télégraphiques has just published telegraphic statistics for 1906, compiled from official documents, and some idea will be gained of the enormous volume of telegraphic business from the following figures, which cover all classes of telegrams, paid, free, inland and foreign.

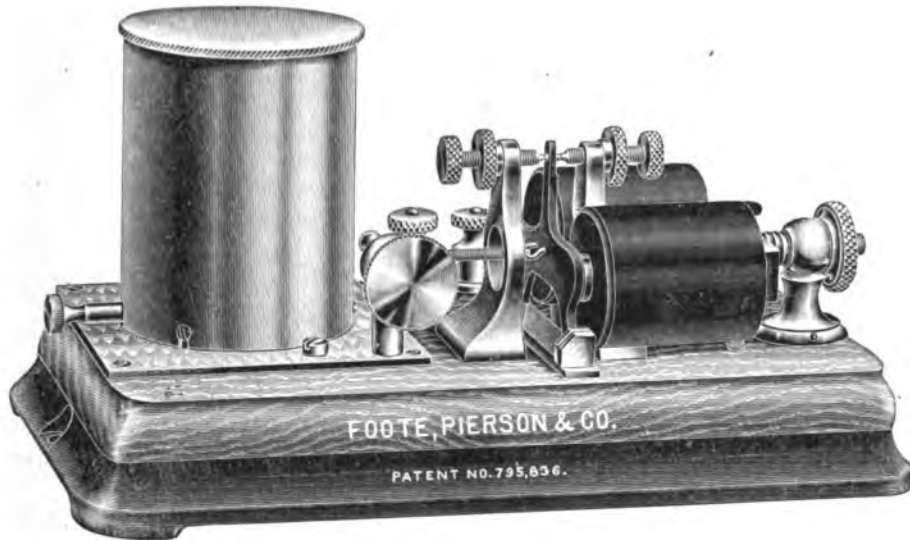
Germany dealt with 52,490,981 telegrams; the Commonwealth of Australia and Tasmania, 14,454,114; Austria, 18,846,187; Belgium, 7,771,462; Bosnia, 708,253; Brazil, 1,723,871; Bulgaria, 1,496,062; Cape, 3,169,067; Portuguese Colonies, 264,951; Denmark, 2,803,341; Egypt, 5,934,239; Spain, 5,170,649; France and Algeria, 57,874,120; Great Britain and Ireland, 93,771,000; Greece, 1,540,775; Hungary, 10,017,452; British India and Indies, 24,912,336; Dutch Indies, 843,118; French Indo-China, 1,137,633; Iceland, 3,814; Italy, 15,812,569; Japan, 24,909,842; Luxembourg, 209,275; Natal, 700,312; Norway, 2,554,842; New Zealand, 6,603,497; Orange River Colony, 559,886; Holland, 6,333,205; Portugal, 3,758,554; Roumania, 3,309,358; Russia, 28,280,333; Senegal, 176,791; Serbia, 722,889; Sweden, 3,602,568; Switzerland, 5,106,697; Tunis, 922,292; Turkey, 6,333,357; and the United States of America (Western Union Telegraph Company, 1905, and exclusive of the Postal Telegraph-Cable Company and the leased lines), 67,477,320. It will be seen that the above do not include the figures for all countries, but those quoted give a grand total of 482,307,012 telegrams.

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Established
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or Group of
Stations
Automati-
cally.



The Multiple
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any Number
of Selectors
up to fifty.

Is Simple to
Operate.

Turn the
Pointer to
Number
wanted, pull
down the
Hook and let
go.

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This volume contains 134 pages, including 105 full-page diagrams; size 7 x 4½ inches; price 50 cents. Fourteen pages are devoted to rules governing the construction and repair of telegraph lines; and four to the subject of standard tools. Submarine cable splices, underground cable splices, single-wire joints and aerial cable splices are also fully treated. Under the general head of Rules for Wiring Offices and Cable Boxes, the subjects of the terminal office, intermediate offices, submarine and underground cables, aerial cables, call circuits and call boxes, leased wire offices, branch offices, miscellaneous, are fully given. Then come rules for the care of motors and generators, explanation of and rules for the care of the Callaud battery, rules for the care of the Leclanche battery and resistance coils, following which is the table of Size and Insulation of Wire Cable for interior use, and that of Wire Gauges.

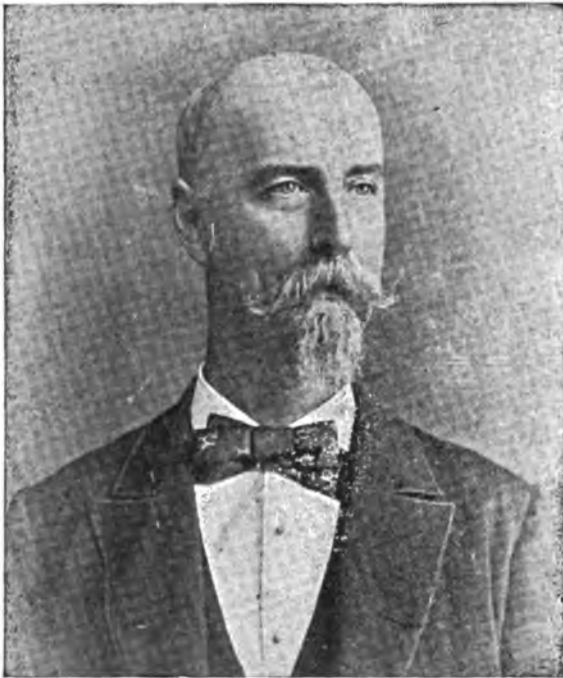
The nominal price for so large, important and complete a work, embellished with so many first class plates, made especially for it, makes the book a valuable acquisition, indispensable to every telegraph and electrical student. The book contains diagrams of the Phantoplex system, the latest development in the telegraph art. All of the engravings are made from the official blue-prints of the Postal company, and are therefore absolutely correct, and have been produced under the direct supervision of John F. Skirrow, associate electrical engineer.

All orders should be addressed to
J. B. TALTAVALL, Telegraph Age
Remit by Postal or Express Money Order. 283 BROADWAY, N. Y.

Death of William H. Young.

William Hamilton Young, night manager of the Western Union Telegraph Company at Washington, D. C., died suddenly at Chicago, on the morning of Friday, June 19. Mr. Young was in attendance at the Republican National Convention, going thither to look after the transmission of press matter sent by Washington correspondents to their respective papers. He became seriously affected by the heat, and this added to stomach trouble caused his death, which occurred at the residence of his son, Frank M. Young, on the morning following his attack.

The death of Mr. Young, familiarly, almost affectionately, known as "Ham" Young, removes one of the best known individualities in the telegraph service of this country. To the newspaper



WILLIAM H. YOUNG.

Late Night Manager, Western Union Telegraph Company, Washington, D. C.

correspondents of Washington his passing will be regarded as a personal loss, for in his capacity of having charge of the press gallery of his company in the capitol building during the sessions of Congress, a position he held continuously for many years, his relations with the press representatives of the country became intimate and cordial. His memory was a storehouse of reminiscence recall. It dated back to the period of the Civil War and to the years preceding that conflict, for he had been in telegraph harness in Washington since 1856, and correspondents found in him a never-failing supply of authentic material for many a good story. He was a prolific writer on the subject of the early history of the telegraph, its personnel, as well as that of the press. His contributions frequently appeared in

Telegraph Age. In 1905-06 Mr. Young was president of the Old Time Telegraphers' and Historical Association, and when the annual meeting of that body was held in Washington in 1906, he furnished a most interesting reminiscent sketch as a contribution to the records of that body. It was published with illustrations in Telegraph Age September 16, 1907. Probably no one had a wider acquaintance among leading journalists than this veteran of the key.

Mr. Young was born in Washington, March 18, 1838, and had therefore reached his seventieth year. In 1854 he became a messenger in the local office of the Washington and New Orleans Telegraph Company. Acquiring the ability to telegraph, he became an operator and was given a position as such with the Magnetic Telegraph Company. With the exception of six months in 1856, when he was in charge of the office of the Baltimore and Ohio Telegraph Company, at Moundsville, W. Va., Mr. Young had resided in Washington. In 1861 he was appointed chief operator of the American Telegraph Company, and a portion of the time during the Civil War he acted as government censor.

In 1864 he was appointed assistant manager of the United States Telegraph Company, and in 1866 became manager of the Bankers and Brokers Telegraph Company. When that company was merged with the Western Union Telegraph Company in 1871, he accepted a position with the latter as assistant chief operator, shortly thereafter being promoted to be chief operator, subsequently being advanced to night manager, the position he held at the time of his death.

In 1882 Mr. Young became vice-president of the Telegraphers' Mutual Benefit Association of New York, his name never disappearing from that office in all the subsequent years. For more than forty years Mr. Young had been an active member of the Sons of Jonadab, a temperance organization, of which of late years he had been the sovereign secretary. He was noted for his temperance principles, although never a fanatic. His helpfulness to the unfortunate, to the outcast, to the drunken, will dwell long in the memory of many whose lives he rescued. It may truly be said of Mr. Young that he was a clean man, of upright character, an admirable type of the practical Christian gentleman. As a telegrapher he held high place, and his death is a distinct loss to the profession and to the company in whose service he was an honored employe.

Obituary Notes.

Albert L. Dunn, aged forty-three years, an operator employed by the Postal Telegraph-Cable Company, at Atlantic, Iowa, died at that place on May 31.

W. R. Hull, local secretary of the Commercial Telegraphers' Union at Memphis, Tenn., was drowned in the Mississippi river at that point on June 6. His home was in St. Louis, where he leaves a wife and two children.

The Cable.

Cable communication is interrupted June 25, with:

Venezuela	Jan. 12, 1906
Madura Island (Dutch East Indies)	Feb. 3, 1908
Lanzarote (Canaries)	May 18, 1908

Messages go by steamer from Las Palmas.

To show the extent of the damage done to the cables by the trawlers off the west coast of Ireland, it is stated that one of the cable ships engaged in repairing cables recently found a cable damaged by a trawler for some two hundred and fifty fathoms; the cable was flattened and strained and the core opened out in places. Two pieces of trawlers' net were found on the cable.

The Spanish government has called for tenders for the construction and installation of a submarine telegraph cable from Cadiz to Tenerife, thence to Grand Canary, Palmas and Gomera, from the latter island to Hierro, from Grand Canary to Puerteventura and thence to Lanzarote. The cost, not to exceed 5,000,000 pesetas (over \$850,000), is to be distributed over two years. The present cable, laid many years ago, is practically worn out.

The Trawlers and the Cables.

In the English House of Commons the question of breakage of the Atlantic cables off the west coast of Ireland by steam trawlers came up lately for discussion. It was said by Winston Churchill that representations received from bankers, brokers, merchants and shipowners to the effect that there had been damage to submarine cables off the west coast of Ireland, and the Secretary of State for Foreign Affairs informed him that he had received a similar representation from the American Ambassador. He understood that the subject had also been brought before the notice of the Postmaster-General by the companies concerned, and the question had been raised at the International Telegraph Conference. He could not say whether the damage, which took place some fifty miles from the coast, had been caused by the operations of steam trawlers, but he was making inquiries, and was considering, in consultation with the Postmaster-General, whether any steps could be taken under the International Telegraph Conference and the Submarine Telegraph Act, or otherwise, for the protection of the cables, assuming the trawlers to be in fault. He understood that one of the companies concerned had recently substituted a heavier type of cable in the area affected with good results. There were obvious objections to showing the routes of those cables on the admiralty charts, but the government would take whatever steps might be possible to safeguard the commercial interests of the community in regard to this matter.

It is claimed that there have been twenty-seven breakages in Atlantic cables due to trawlers. George G. Ward, vice-president and general

manager of the Commercial Cable Company, has a mass of split cable inextricably interwoven with fishermen's netting which he intends to send as evidence to the British foreign office.

There is some feeling, remarks an English journal, that the British cable companies have suffered in the past from lack of sympathy from British government departments in this connection, and it is considered, therefore, that the matter having become international in character, American interests being involved, it will now be taken up in a more energetic manner, possibly, conforming to a suggestion made, we believe, some time ago to the English government, that a naval vessel should be stationed somewhere off the Irish coast to protect the Atlantic cable zone, it being pointed out that the companies owning the cables have no prescriptive right to interfere with fishing operations in that zone. Of recent years submarine cables have been subject to serious damage from the heavy steam trawls and trawling gear which mark the development of deep sea fishing. This gear is capable of lifting immense weights and of operating down to eight hundred fathoms. Impact with this gearing, no matter how heavy the type of cable may be, results in serious injury, and it is said that the Anglo-American Telegraph Company has during the past two years spent no less than \$400,000 in repairs and renewals to cables in this particular area. The fishermen themselves will, it is thought, welcome regulation, as they are also sufferers in that their nets are frequently damaged while operating in waters where the cables are situated. It is agreed, too, we believe, that the waters off the Irish coast where the trouble is now centered are not essential to fishing operations. Apart altogether from the money value at stake, there is high political necessity for international protection.

International Telegraph Conference.

An important feature in the proceedings of the International Telegraph Conference, at Lisbon, was reached on June 5, when the question of the pronounceability of code words was dealt with. A stipulation was inserted to the effect that codes should be submitted to the telegraphic administrations for approval. A board of control, consisting of British, French and German representatives, will be appointed to deal with such codes. Mr. H. Babington Smith, of England, has pointed out that codes not presented for approval, as well as those not approved, will nevertheless remain in force, but each administration will have the right to refuse words contained in them. Thus existing codes will not be interfered with, but it is anticipated that they will gradually be revised. Press telegrams may in future be written in the language of the journal to which they are addressed. Slight reductions have been effected in the terminal and transit rates, and the rules formulated by the Radio-Telegraphic Convention

affecting a land transit of telegrams from or to ships have been embodied in articles.

Those in attendance at the International Telegraph Conference at Lisbon found time, it appears, to accept many social courtesies. A programme for such entertainment had been prepared in advance, inclusive of numerous dates from May 4, when the Conference assembled, to June 13, its date of closing, a series of brilliant and most delightful functions being listed. These included receptions, one of which was given by the king; dinners, excursions to various nearby points of interest and a bullfight. On the evening of the last day of the Conference a dinner to the delegates was tendered by the Councillor Director-General of Posts and Telegraphs.

Municipal Electricians.

Patent No. 453,082, for a fire alarm telegraph, held by G. F. Milliken, of Boston, has expired.

The International Association of Municipal Electricians will hold its thirteenth annual convention at Detroit, Mich., on August 19, 20 and 21. At this meeting the following papers will be presented: "Combination Cables for Fire and Police Signal Systems;" "Moving Picture Hazard;" "Batteries for Signaling Systems;" "Testing for and Locating Faults in Electrical Transmission Lines;" "Electrical Equipment of a Fire Station;" "Modern Police Signal System."

Morse Electric Club Outing.

The outing of the Morse Electric Club, as previously announced, will be held at Cove Hotel, New Brighton, Staten Island, July 18. The cable tug "Western Union" has been placed at the disposal of the club through the courtesy of Colonel Clowry, to convey the members to and from the grounds. Numerous games will be indulged in, and an enjoyable time is expected. The entertainment committee are arranging for the comfort and enjoyment of the members. J. B. Van Every is president of the club, F. J. Scherrer, secretary, and R. J. Murphy, treasurer.

Train Despatchers' Convention.

The American Train Despatchers' Association met in annual convention at Fort Worth on June 16. By reason of delay in arriving, occasioned by wash-outs, President Mullinix and Vice-president Carl Mitchell did not reach Fort Worth until the second day of the meeting, F. X. Myers serving meantime as president pro tem. Six new candi-

dates were elected to membership. The discussion on the third day of the convention was devoted almost entirely to questions concerning the present method of operating trains of the country under the block system, train register advantages, disadvantages and frequent wrecks, caused by improper entries by conductors, operators etc. The discussion on the train rules committee's report, which was begun at the Wednesday session, was continued and disposed of.

NEW YORK WESTERN UNION.

The vacation season is now well advanced. Among those absent at this time are T. A. McCammon, chief operator; F. D. Giles, assistant chief operator, and A. M. Lewis, eastern traffic chief.

T. M. B. A. Assessment.

Assessment No. 480 has been levied by the Telegraphers' Mutual Benefit Association to meet the claims arising from the deaths of Patrick H. Hughes, at Baltimore, Md.; Martin B. Hills, at Jersey City, N. J.; William J. Murphy, at Cincinnati, O.; Luther Ruthraff, at Milton, Pa., and Albert L. Dunn, at Atlantic, Ia.

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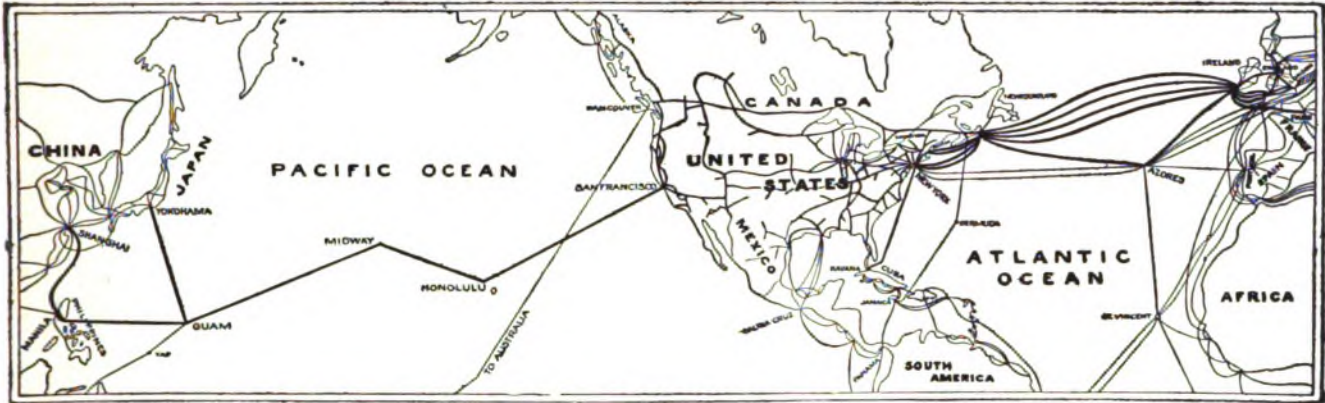
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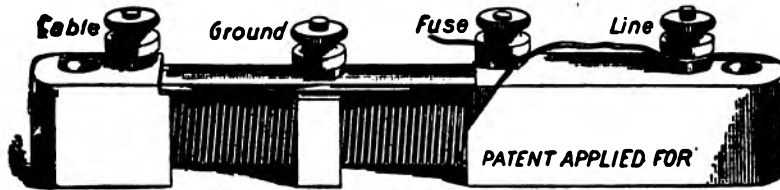
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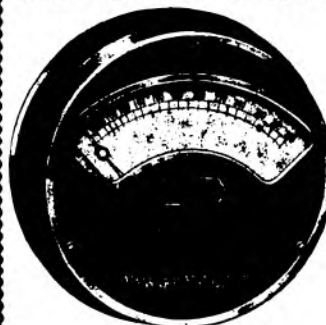
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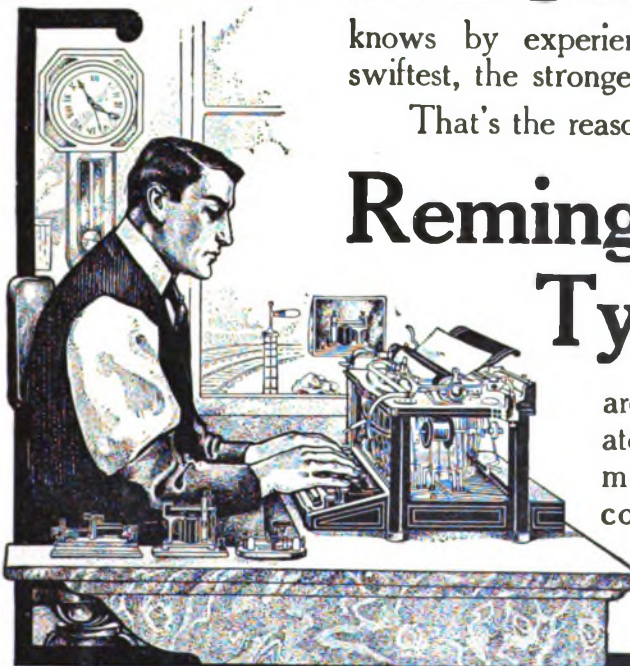
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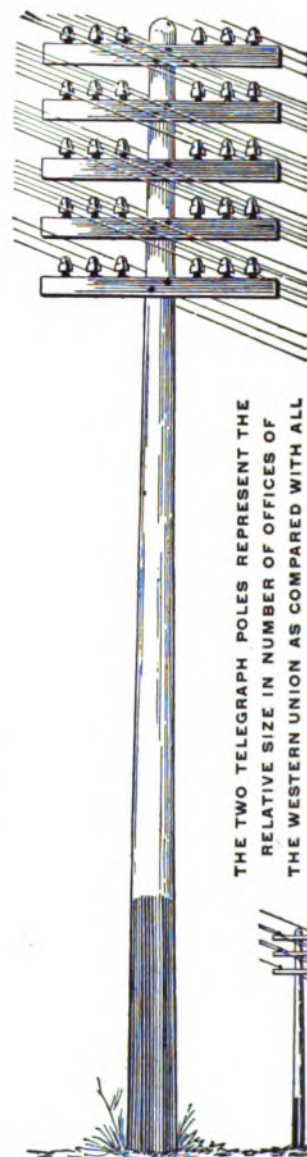
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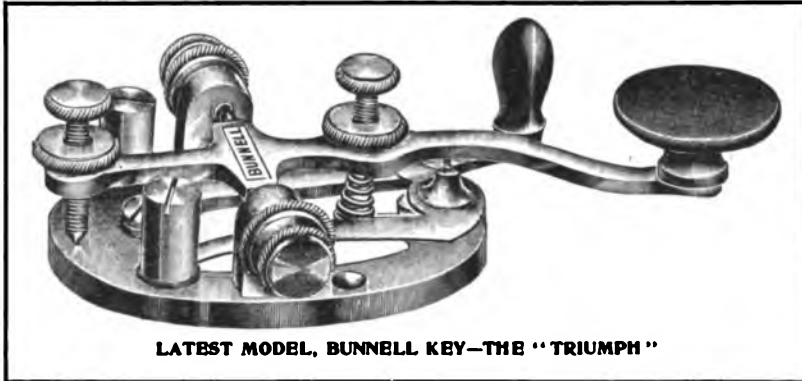
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SOME POINTS ON ELECTRICITY.

A Few Simple Rules to Follow. (Continued)

BY WILLIS H. JONES.

Not only is it required that one should display something more than mere guesswork in the performance of even such simple tasks, for example, as the insertion of wires in binding posts, and straightening bent switch levers, as described in the preceding installment of this article, but one should understand the construction of all the apparatus he uses sufficiently well to minimize the chances of endangering the same through ignorance in handling.

LAMP SOCKETS.

For example, nearly every one who possesses but a limited knowledge of the construction of an ordinary lamp socket of the old standard wood-brass pattern, still used in many offices where the later standard porcelain type has not as yet been installed, makes the common but natural mistake, when inserting a new lamp, of twisting the latter as hard against the bottom connection as possible with the idea of making a firm and lasting contact between the outer and inner connections.

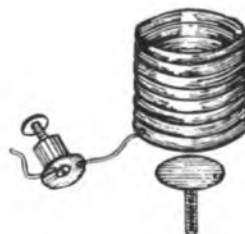
If the reader will glance at A in Figure 1 and

observe the delicate manner in which the bottom and the inner shell are connected together, a further reason for guarding against undue pressure will hardly be required.

It will be seen that the inner cylinder-shaped brass into which the lamp is screwed is joined to the outer binding post by means of a small wire soldered to each. The cylinder, of course, fits snugly in the wooden holder, especially when new, but in time the wood shrinks and does not hold so well as originally. It is obvious, therefore, after the lamp has touched the solid bottom connection any undue pressure in the way of extra twists will cause the cylinder itself to turn around and thus tend to break off the wire or loosen the soldering. Hence when inserting a new lamp in an old socket, or even a new one, the best plan is to merely see that the connection is firm and not to use any unnecessary force in urging it further.

REPAIRING FLEXIBLE CORDS.

Another thing that should be more generally



A

FIGURE 1.

understood is the proper way to mend defective flexible cords. This knowledge is especially beneficial to those in charge of branch and small offices, where linemen are not stationed and repairs must consequently await the latter's convenience.

Now, while the operation itself is apparently simple a novice usually makes a bungle of the job in the very last of the proceedings, namely, in the manner in which he winds on the twine wrapping and fastens the last turn so as to avoid unravelling. This should be done in such a manner that a knot will not be required and thus create a lump or uneven finish. B in Figure 2 shows how this can be accomplished. It will be seen that when the wedge has been wrapped to within about one-half of an inch or less of the finish the twine is then looped and one side of the loop is then wound over the other until the final turn is reached, after which the loop is pulled down or through by means of the free end until

nothing remains of the protruding loop or wrapping twine, and the end clipped off. In this way the wrapping, which, by the way, should be wound on very tight, holds the terminal of the last turn securely. It will also be seen that the terminal string is placed on the narrow instead of the flat face of the wedge in order that the very slight ridge it makes will not be in the way.

C, in Figure 2, shows the first part of the operation. The twine wrapping and holding tape should first be removed, after which the two strands or conductors can be pulled out of the wedge. Then with a sharp knife remove enough of the green cord covering to get fresh conductor material, and after scraping the tinsel lightly reinsert the two wires in the proper place in the wedge, as shown in B, after which the ends may be trimmed to the proper length, taped, and rewound with the final wrapping as described. In case of cords used for duplex local circuits care must be exercised in order to avoid reversing the sending and receiving sides respectively. In the Western Union system it will be found that the cord terminals have different colors, one green and the other red. So all that is necessary to avoid confusion is to observe which side the two

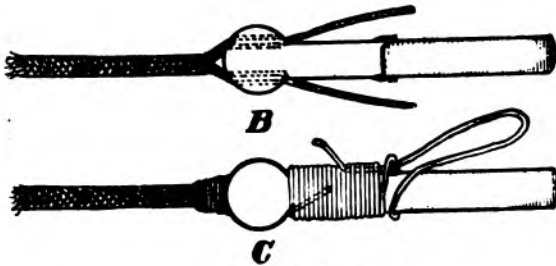


FIGURE 2.

colors are normally arranged and then replace them in the same order.

TEMPORARY REMEDY.

As a rule when all the tinselled threads which compose the two strands of the flexible cord conductors are not actually broken the periodical opening of the circuit due to jarring or moving the cord may be avoided temporarily by giving the cord several twists at the wedge end. This method presses the loose tinsel strands closely together and thus creates a continuity of contact which is not so easily broken.

Of course, this suggestion is merely for the purpose of providing an emergency remedy and is in no way a cure for the evil.

Recent Telegraph Patents.

A patent, No. 888,098, for an automatic phototelegraph, has been granted to Arthur Korn, of Munich, Germany. Selenium cell apparatus having detail features.

A patent, No. 890,661, for telegraphy, has been granted to Isidor Kitsee, of Philadelphia. A series of transmitting and receiving devices are connected each at a different point to an all-metallic line, the

receiving devices being connected in parallel with the interposition of condensers to the line, and the transmitting devices embracing sources of current and a transmitting key and means to insert the sources in series to the line.

A patent, No. 890,911, for printing telegraphy, has been issued to Isidor Kitsee, of Philadelphia. The method of actuating a printing device at a receiving station of a submarine telegraph station, which consists in selecting through impulses of like duration and intensity following each other in unequal succession, the required printing type, and causing the receiving mechanism to return to its normal position by an additional impulse.

A patent, No. 892,319, for a binding post, has been awarded to Nicholas Sohl, of New York. A binding post making use of a U-shaped spring clip with laterally extending lugs having perforations to receive a conductor which is engaged by the outer prong of the clip.

The following patents have expired:

Patent No. 454,884, for a printing-telegraph instrument, held by F. Sedgwick, of Chicago, Ill.

Patent No. 455,075, for a printing telegraph, held by H. van Hoevenbergh, of New York.

Personal.

Mr. S. F. Jones, formerly assistant electrical engineer of the Postal Telegraph-Cable Company, is now filling the position of lighting engineer of the lighting and cable department of the Hudson and Manhattan Railroad Company, New York.

The numerous telegraph friends of James Kempster, the well-known printer of this city, were shocked and grieved to learn of the death of his daughter, Louise E., the wife of Theodore W. Mathews, which occurred suddenly on July 8.

Mr. James Kent, manager, and William J. Camp, electrical engineer of the Canadian Pacific Railway Company's Telegraphs at Montreal, Que., have gone west on a tour of inspection covering the lines of that system, their journey to extend as far as the Pacific Coast.

Mr. R. W. Ledwith, of 155 Washington street, Chicago, an old-time telegrapher and well known newspaper man, has entered the field as a newspaper correspondent and announces facilities possessed by him to furnish news specials by wire, news letters by mail, and ability to obtain interviews, of which he will furnish stenographic reports if desired.

Mr. Joseph P. Church, an old-time commercial telegrapher, for many years identified with the Western Union service at Toledo, O., but for the past twelve years chief clerk in the office of G. C. Kinsman, superintendent of telegraph of the Wabash railroad system at Decatur, Ill., was a recent New York visitor. Mrs. Church accompanied her husband.

The Barclay Printing Telegraph System.

BY WILLIAM FINN.

(Continued.)

THE PERFORATOR—CONTINUED.

Referring to the punch levers (10, Fig. 9*), their adjustment should bring into action only such punches as those to be selected (all others being entirely cleared or passed over in the operation), such adjustment being generally secured by increasing or diminishing the length of the connecting links.

The feed levers should be adjusted so as to allow the feed bail (27, Fig. 11) to pass or clear all levers (except the one selected) by an interval of about $1/32$ inch. The movement of the feed bail with its graduated steps should be so regulated that the pins of the feed wheel will be carried up to the plate (55) directly above them when the feed lever roller (54) is on the high spot of the feed cam (24). Should the flat curved spring (56) be compressed after the pins strike

The same amount of play should be allowed between the latter and the clutch lever when the small roller (46, Fig. 12) is on the high part of the cam ring (38) which encircles the rigid part of the clutch. When this roller is opposite the low spot on the cam ring, and the clutch is released, there should be enough play in the clutch lever to allow the tit (51) on the movable member of the clutch to pass freely.

The clutch is composed of three members mounted on a shaft (23, Fig. 11) carrying the teed and punch cams (24, 25). One member of the clutch revolves continuously, being held in position lengthwise of the shaft by a pin and a collar; the second member revolves longitudinally on the shaft, and when released carries with it by means of a fork the third member which is fastened rigidly to the shaft. On the periphery of the second clutch member is a tit, which prior to the depression of a key lever, holds the cam shaft in a stationary position, but releases it after

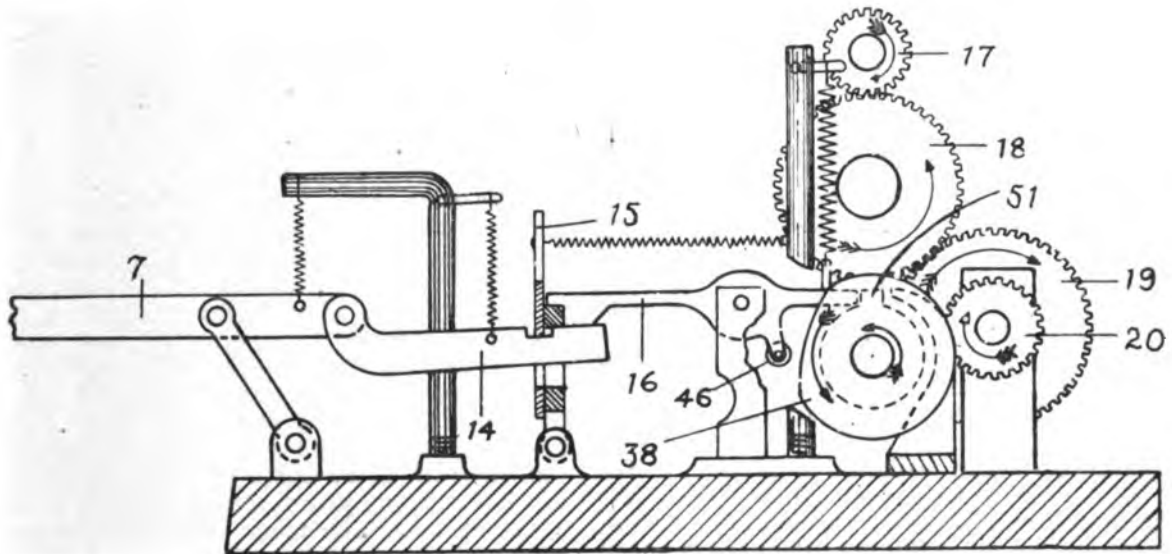


FIGURE 12.—MOTOR GEARING AND CLUTCH MECHANISM.

the plate, the bail steps should be regruated.

After the punch bars have been carried downward by the depression of a key lever they come into contact with a universal crossbar (5, Figs. 7 and 8), having on one end an adjustable fork (6) which operates a second universal bar (7). The latter releases a clutch (21, Fig. 7) by means of a hook lever (14, Fig. 12) which in turn disengages and locks automatically the clutch lever (16) through the medium of the small upright lever (15). The adjustment of the fork on the end of the first universal bar should be such as to prevent any possible action until the selected punch levers are down low enough to ensure their catching the punches to be operated. There should be about $1/64$ inch play between the point of the hook attached to the second universal bar, and the small upright releasing and locking lever.

the depression, the tit being also utilized to disengage from the first member (51, Fig. 15) by means of a small fixed cam (22, Fig. 16) when one revolution of the cam shaft is nearly completed. It is highly important that the clutch, punch cam, and feed cam, be set or adjusted on the shaft in proper relation to each other. The clutch is pinned to the shaft and is therefore not adjustable, but the cams are held in position by means of set screws. The feed cam should be so set that when the feed lever roller is on the low spot there should be about $1/64$ inch between the tit (51, Fig. 12) of clutch and the socket of clutch lever.

The punch cam is so constructed and set that it will operate the punch bail immediately after the clutch is released, the high spot in the cam being very short, to enable the punches to clear the tape immediately after the work of perforation has been duly performed.

* Figures 7, 8, 9, 10 and 11 referred to in this installment, appeared in the July 1 issue.

The construction and adjustment of the feed cam is of such character as to allow the feed bail (27, Fig. 11) and knockdown arm (33, Figs. 7, 10 and 11) to be actuated immediately after the clutch is released, the high spot of the cam being of sufficient length to give the punches time to clear the slip before feeding of the same takes place.

The knockdown arm is made in two parts, one a rod to which is fastened a horizontal lever, and the other a containing tube (57, Fig. 11) through which the rod passes. When the clutch is released the knockdown arm is raised up and pulled by

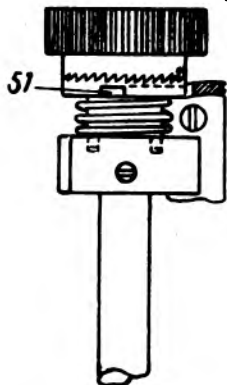


FIGURE 15—CLUTCH.

a spiral spring over the top of the feed pin now resting against its limiting stop (59, Fig. 11). After the feed cam has completed its revolution the knockdown arm is impelled downward, carrying with it the pin over which it was raised, thus enabling the feed wheel to turn until the pin selected by the last letter punched is brought into contact with the stop. This stop should be adjusted so as to cover a little more than half the diameter of the feed pin, as the lever attached to the knockdown arm strikes that portion of the pin extending beyond the stop. When the knockdown arm is at its lowest point, the lever of same should be slightly lower than the stop, to ensure the feed pins being driven low enough to

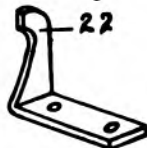


FIGURE 16—FIXED CAM.

permit free movement of the feed wheel. There is an adjustable spring (58, Fig. 11) on the knockdown arm which serves two purposes; it represents the power which knocks the pins down, and also assists in bridging over the moment of no contact at the teeth of the clutch, when the latter is released by its tip coming into contact with the clutch release cam.

(To be continued.)

Those who contemplate subscribing for TELEGRAPH AGE, and who would first like to inspect a sample copy, should not fail to write for the same.

Western Union Telegraph Company.

EXECUTIVE OFFICES.

Mr. John F. Wallick, superintendent at Indianapolis, Ind., accompanied by his wife, was a recent New York visitor. Mr. Wallick is the dean of the corps of Western Union superintendents, having held his present position since January 1, 1864.

Mr. C. B. Dunham, manager of the Western Union cable station at Canso, N. S., was another recent visitor at this office, coming to New York on the cable steamer Mexican, after having been engaged in superintending repairs to one of the cables near Canso.

Mr. William Finn, of the electrical engineer's office, whose health has not been of the best of late, was a passenger on the steamer Mexican on both her outward and return voyages, deriving much benefit from the trip and the life on board during the period necessary for the cable repair.

Miss C. A. Van Brunt, attached to the office of Geo. H. Fearons, general attorney of the company, has gone to Europe, making one of a party of four, and will probably be absent two months.

Mr. John Simmonds, assistant city superintendent, and L. Wingate, of the World office, attended the Democratic convention at Denver in order to look after the interests of the New York city newspaper correspondents.

Some days prior to the opening of the Democratic National Convention at Denver, L. McKisick, assistant general superintendent, and J. J. Welch, assistant traffic chief, of Chicago, were in attendance at the convention building, going thither in order to look after the final arrangements necessary for the proper handling of the anticipated enormous traffic. On July 1 a further contingent went from Chicago to Denver, also in behalf of the same interests, the party consisting of T. P. Cook, general superintendent; M. T. Cook, his private secretary; W. J. Lloyd, assistant superintendent. Accompanying them was J. G. Jennings, superintendent of telegraph of the Chicago, Rock Island and Pacific Railway. The Chicago office also sent an assistant force to Denver of about sixty operators.

The annual meeting of the American Union Telegraph Company, of New Jersey, was held at 76 Montgomery street, Jersey City, N. J., on July 8. An election of officers was had which resulted as follows: Robert C. Clowry, president; Thomas F. Clark, vice-president; A. R. Brewer, secretary, and M. T. Wilbur, treasurer. Directors, R. C. Clowry, B. Brooks, Thos. F. Clark, J. B. Van Every and J. B. Bertholf. Judges of election were: C. W. Conklin, Frank E. Coyle and George Roehm.

Mr. Gifford Presents a Park.

New England seems to be held in special reverence and love by many of its sons and descendants, who turn with feelings of peculiar attachment to their ancestral home. An instance of devotion to this sentiment is witnessed in the

action of Sidney Brooks Gifford, of Syracuse, N. Y., former superintendent at that point of the Western Union Telegraph Company. He has presented to the town of Harwich, Mass., a plot of seventeen acres, which included the site of the home of Mr. Gifford's father and many preceding generations of the Brooks family, of which Mr. Gifford is a descendant, it having been in the possession of his family for one hundred and fifty years. The town desired to acquire this property, but with generous public spirit, evincing a deep-seated love for old associations, Mr. Gifford refused to sell and instead donated the property to the town. It will be devoted to public uses and will be known as Brooks Park, thus worthily perpetuating the Brooks name in a community where its living personnel was once held in such honored esteem.

Louis F. Wise, Western Union Manager at Minneapolis.

Louis F. Wise, who has been appointed man-



LOUIS F. WISE.
Manager Western Union Telegraph Company,
Minneapolis, Minn.

ager of the Western Union Telegraph Company at Minneapolis, Minn., mention of which was made in *Telegraph Age* July 1, elevates to that position a telegrapher of fine talents. He was born in the twin city of St. Paul, February 26, 1862, and gained his first telegraphic experience with the Northwestern Telegraph Company in that place, subsequently being taken into the employ there of the Western Union Telegraph Company, when that concern absorbed the former. In 1880 he entered the employ of the Mutual Union Telegraph Company at Chicago, but when that company in turn was also merged with the Western Union in 1884, Mr. Wise returned to St. Paul, once again entering the Western Union service. Faithful and attentive to duty, from the position of operator he was promoted in 1893 to be traffic chief. For nine years he discharged the duties of that place with credit to himself and to the satisfaction of his company. His reward

came when in November, 1902, he was appointed manager of the Chamber of Commerce office in the neighboring city of Minneapolis. Because of peculiar fitness Mr. Wise was the logical successor to J. E. McCann, when the latter recently retired from the managership of the main office.

Postal Telegraph-Cable Company.

EXECUTIVE OFFICES.

Mr. E. J. Nally, vice-president and general manager of the company, is on his vacation and will be absent for the remainder of the month.

Mr. Charles C. Adams, second vice-president, following the Chicago precedent, was in attendance at the Democratic National Convention at Denver, to look after company interests.

Mr. Charles P. Bruch, third vice-president, is spending the summer at Glen Cove, L. I., going to and from business every day.

Mr. S. B. Haig, superintendent of traffic, New York, was also present at Denver, in his official capacity.

Mr. John F. Skirrow, associate electrical engineer of the company, is absent on his vacation.

Mr. Isaac Smith, superintendent of tariffs, is mourning the loss of his mother, who died on June 28, at her home at Little Falls, N. J.

The Plattsburg, N. Y., and Burlington, Vt., offices have been remodeled, fitted with an entire new equipment and brought up to date in every respect.

Mr. A. C. Kaufman, of Albany, N. Y., having resigned as superintendent of the sixth district, eastern division, effective June 30, 1908, that district has been merged with the first, second and fourth districts, and the boundary lines of all the districts in the eastern division have been rearranged, as follows:

First District—A. L. Edgecomb, superintendent, Boston, Mass., will include all the lines and offices in the states of Maine, New Hampshire, Massachusetts, Rhode Island and the office at Brattleboro, Vt., with the line extending from that point to the Massachusetts state line.

Second District.—E. Kimmey, superintendent, New York, will include the lines and offices in the states of Connecticut and Vermont, excepting Brattleboro, also lines and offices in New York east of a line drawn from and including Malone, and extending to, but not including, Utica, thence to Harford, Pa., not including Binghamton, N. Y., thence to Wilkes-Barre, Pa., Chester, Liberty Corners and Lakewood, N. J.

Third District.—L. Lemon, superintendent, Philadelphia, Pa., will include all lines and offices in New Jersey, excepting those already specified, all lines and offices in Maryland east of and including Hancock test pole, all lines and offices in Pennsylvania, not already specified, east of and including Harrisburg, also all lines and offices in the District of Columbia.

Fourth District—H. D. Reynolds, superintendent, Buffalo, N. Y., will include all lines and offices in New York state west of and including

Binghamton and Utica, and west of a line drawn from Utica to Malone.

Fifth District—C. E. Bagley, superintendent, Pittsburg, Pa., will include all lines and offices in Maryland west of Hancock, in West Virginia north of and including Morgantown and Wheeling, also the office at Bellaire, Ohio, and the line connecting therewith, and lines and offices in Pennsylvania west and north of Harrisburg and Towanda, including offices along the Northern Central Railway.

As announced in our issue of July 1, the new office at Birmingham, Ala., situated nearly directly across the street from the old quarters, are for temporary occupancy only, pending the erection on the former site of a greater Brown-Marx building, sixteen stories in height, to be one of the finest office structures in the South, into which this company will remove when completed, probably about a year hence. The new operating room will be on the top floor and will be fitted up with every modern requisite for the perfect equipment of such a room, including all tube connections, etc., with the lower floors. On this same floor will be located the office of the superintendent, while the business office on the ground floor will be a model in its way, both for convenience of arrangement and beauty of finish. The present offices, even though for but transient use, are first class in all particulars, with the business office on the first floor, operating room on the second, while the third will be occupied later by Superintendent Hargrave and others.

The Railroad.

Announcement is made by N. E. Smith, superintendent of telegraph of the New York, New Haven and Hartford Railroad Company, of the appointment of W. H. D. Ford as assistant superintendent, effective July 1, and with headquarters at New Haven, Conn.

Messrs. B. A. Allen and C. A. Soans, representing the Homer Roberts Telephone Company of Chicago, recently made a demonstration of their system of despatching trains by telephone on the Delaware, Lackawanna and Western Railroad at the terminal station, Hoboken, N. J.

Among recent visitors at New York of superintendents returning from the Montreal convention, were W. F. Williams, of Portsmouth, Va., superintendent of telegraph of the Seaboard Air Line Railroad; W. P. Cline, of Wilmington, N. C., superintendent of telegraph of the Atlantic Coast Line Railroad; W. W. Ryder, of Chicago, superintendent of telegraph of the Chicago, Burlington and Quincy Railroad, and V. T. Kissinger, of Lincoln, Neb., assistant superintendent of telegraph of the latter system.

Mr. F. S. Rawlins, whose appointment as superintendent of telegraph of the Southern Pacific Company, succeeding A. E. Roome, resigned, with headquarters at San Francisco, noticed in this

column, July 1, places in that position a gentleman whose qualifications for the position are of the best. Mr. Rawlins is of eastern birth, a native of Maryland, having been born in Cecil County, that state, on January 21, 1854. Early in life he became a telegrapher, a profession which he followed successfully, for he made it a careful study, at all times a diligent student and wide observer. He was formerly associated with the Southern Pacific at Ogden, Utah, as manager of the telegraph office at that point. While there he gained for himself an excellent reputation in the system which he served. Subsequently he entered the service of the Kansas City Southern road, later becoming assistant trainmaster of the Northern Pacific Railway at Wallace, Idaho, a position he was filling when called to his present place.

Echoes from the Montreal Convention.

The "echo" of the convention, which comes echoing from all points of the country, is that the meeting was a great affair. This is the testimony on all lips. Many of the railway telegraph superintendents who were in attendance are exchanging felicitations over the happy rendering of a programme admirably arranged to promote their social pleasure. The plan was liberally conceived by those having it in charge, and was carried out in a manner indicative of a broad and generous spirit. As it begins to appear that the splendid courtesy of the Canadian Pacific Railway in conveying as its guests as many as chose to accept the invitation to visit Quebec and return, a trip occupying two nights and a day, with transportation furnished in Pullman sleepers, was due to James Kent, of Montreal, the head of the railroad company's system of telegraph, that personage is winning numerous expressions of golden opinion and of grateful approval. His was a fine thought, worthy alike of the man with whom it originated and of the great railroad company that is accustomed to doing things in a big way. The company, also at Mr. Kent's suggestion, tendered an offer to the active members of the association, of a trip to the Pacific Coast.

The trip to Quebec was a most enjoyable event, and the opportunity to visit that old town was taken advantage of by more than one hundred persons who had attended the convention. Among them was P. W. Drew, of Milwaukee, secretary of the Association of Railway Telegraph Superintendents, who was accompanied by his wife. Returning to Montreal they proceeded to Burlington, Vermont, the birthplace of Mr. Drew, where a number of delightful days were passed in revisiting boyhood scenes.

Among the party who made the Saguenay River trip were William Maver, Jr., wife and daughter, of New York; W. F. Williams, wife and party, of Portsmouth, Va.; I. McMichael, of Toronto, and L. S. Humes, of Montreal.

Radio-Telegraphy.

The United Wireless Telegraph Company has opened a commercial station at Friday Harbor, Wash., working with Seattle and other Pacific Coast points.

A patent, No. 889,792, for telegraphy, has been awarded to Isidor Kitsee, of Philadelphia, Pa. Another detector for electromagnetic waves is described in which there are two series of metallic plates, one being covered with an oxide.

Word arrived from Honolulu, Sandwich Islands, on July 4, that a wireless message was received there from the signal officer of Rear Admiral Sperry's flagship, the Connecticut, at San Francisco. This, the first wireless message sent across the Pacific, was relayed by the Yankton, which is on her way to Honolulu, and which is arranging daily calls for the voyage of the fleet. Already the local station is in touch with the Gulgoa, the St. Louis and the Glacier, and hopes to get into direct communication with the flagship. It is now able to catch faint signals from the California station.

Patents Nos. 889,789 and 889,790, for telegraphy, have been granted to Isidor Kitsee, of Philadelphia, Pa. Means to receive and translate wireless telegraphic impulses comprise the creation of a high temperature through the incoming impulses, an explosive medium in the region of the high temperature, a conductor adapted to be actuated through the explosion of the medium and a local circuit containing a translating device adapted to be made and broken through the movement of the conductor. The second patent covers details of the receiving device.

The United States Wireless Telegraph Company has absorbed the International Wireless Telegraph Company and will hereafter control the patents and rights held by that company. The International company was mainly a manufacturing concern and was engaged in making apparatus under the Shoemaker patents. C. C. Wilson, president of the United company, says that a number of United States ships have installed his service and that a chain of wireless stations now extends along the Atlantic and Pacific Coasts. The connection between the two coast lines will be made as soon as the stations across the Isthmus of Panama are ready. President Wilson says that as soon as these connections are made messages can be sent from New York to Alaska by wireless. The International company was capitalized at \$100,000.

At a recent Royal Society soiree in London, says the Electrical World, L. H. Walter exhibited a tantalum wire point dipping into mercury in a small bottle, as a good detector for wireless telegraphy and telephony and as particularly useful for the latter purpose. In reality Mr. Walter has found that this detector gives louder sounds than an electrolytic detector, which it emulates in other respects, at distances of 450 miles when less than 2 kilowatts was being used. He also exhibited an electrolytic sig-

nal key. It is an instrument for giving Morse signals on circuits using 2 kilowatts or more without any sparking in the air, the current being broken under a solution of ammonium borate in an aluminum valve cell. There are two aluminum disk electrodes facing one another, and separated by a small gap; when the key is depressed, the two electrodes are pressed against one another, so that the current interruption following the next moment takes place across the gas film settling on the aluminum.

Herr Reinhold Sydow, the new German Imperial Secretary of the Treasury, has, according to a special cable dispatch of July 4, to the New York Times, expressed his regret that the American government has not yet seen fit to ratify the international wireless telegraph convention adopted at the conference of the great powers held in Berlin three years ago. England, which proved rather recalcitrant at the conference, has since adopted the convention without reserve, and Germany fails to understand why the United States, which so actively supported the project during the conference, has withheld its formal sanction. It is supposed in Berlin that rival private wireless interests in America are responsible for the Washington government's delay in affixing its signature to the international agreement. The German post offices began, on July 1, to accept wireless telegrams for transmission from the coast to ships anywhere in the world. The postal authorities hope that the public will promptly accustom itself to the new facilities and begin using them on a generous scale.

Book Review.

"Construction and Maintenance of Railway Roadbed and Track," is the latest work of Frederick J. Prior, author of "Operation of Trains and Station Work," and is from the press of Frederick J. Drake and Company, Chicago. The volume affords a praiseworthy treatise on the important subject discussed. The matter treated is gone into thoroughly and will be found of academical value for all interested in railroading, particularly as the instruction it affords is based on information acquired by practical experience. The technicalities of the subject are sufficiently observed, yet without perplexity to the student-reader. Bound in imitation morocco, 500 pages, abundantly illustrated; price, \$2.00. This book will be sent to any address, carrying charges paid on receipt of price by J. B. Taltavall, Telegraph Age, 253 Broadway, New York.

Device for Solving Alternating Current Problems.

Mr. Thomas R. Taltavall, one of the editors of the Electrical World, New York, has invented what he calls the "Universal Calculator." It is a most ingenious mechanical device. While it can be used for all kinds of calculations involving multiplication, division, etc., as its name would

indicate, it is more especially designed for solving alternating-current problems, those which embody frequently examples in trigonometry so difficult of working out by the ordinary slide rule. As the working of the calculator is based on strictly scientific principles, its operation can be depended upon not only as a time saver, but as an unerring means of determining results. Its appearance will be welcomed by all who have occasion to deal with vector quantities.

Business Notice.

A set of four illustrated post cards issued by the Stromberg-Carlson Telephone Manufacturing Company, of Rochester, N. Y., picture the extensive plant of that concern to excellent advantage. On one is shown the familiar main office building, with the neatly kept grass spaces in front; another affords a general view of the main office and factories; another that of the long vine-clad factory buildings fronting on Culver road and surmounted by the big sign of the company, while the fourth presents that portion of the main office and factory obtained in the pretty prospect gained at University avenue and Culver road.

Unveiling of the Roebing Monument.

At the unveiling at Trenton, N. J., on June 30, of the monument erected to the memory of the late John A. Roebing, founder of the John A. Roebing's Sons' Company, and the builder of the Brooklyn Bridge, Henry D. Estabrook, of New York, solicitor of the Western Union Telegraph Company, delivered an address that was masterly in detailing the reasons for the perpetuation of Mr. Roebing's fame in granite and bronze. The day was observed as a holiday, 6,000 Roebing employes marching in procession to the point of unveiling in Cadwalader Park. The monument reaches a height of nearly sixteen feet. It bears in decoration a beautiful brass wreath, contributed by the town of Mulhausen, Germany, the birthplace of Mr. Roebing.

John A. Roebing came to this country from Germany in 1831, at that time a young man of twenty-five. In addition to the Brooklyn Bridge, the crowning engineering act of his life, he designed the Wheeling bridge and the suspension bridge at Niagara Falls. Incidental to the development of these structures came the organization of the great factory and industries at Trenton, N. J., where every process employed may be said to have been invented or improved by Roebing, and where a vast network of enterprises now stands as the result of his energy and genius. This company is probably the largest manufacturer of telegraph wire, both copper and iron, in the world. The business, which aggregates in volume \$20,000,000 a year, is carried to-day with increasing efficiency and success by such men as Ferdinand W. Roebing, W. A. Roebing, Charles G. Roebing, of the second generation, as well as by F. W. Roebing, Jr., and Carl G. Roebing, who represent the third generation.

Mr. Carl G. Roebing is the son-in-law of Mr. Estabrook, the orator of the occasion of unveiling, referred to.

The Cable.

Mr. Albert Beck, secretary of the Commercial Cable Company, has returned from London, where he has been for the past two months on business connected with the company.

Cable communication was interrupted July 10 with:

Venezuela	Jan. 12, 1906
Madura Island (Dutch East Indies)	Feb. 3, 1908
Lanzarote (Canaries)	May 18, 1908

Messages go by steamer from Las Palmas.

Judge Sanford B. Dole, of the United States District Court, has decided the salvage suit brought against the owners of the Pacific Mail Line steamship Manchuria by the Commercial Cable Company, whose cable repair ship Restorer salvaged the liner, by awarding \$61,000 to the Restorer. The Manchuria ran on a reef off Rabbit Island, near Honolulu, during a storm in August of 1906.

The Nantucket Cable Sold.

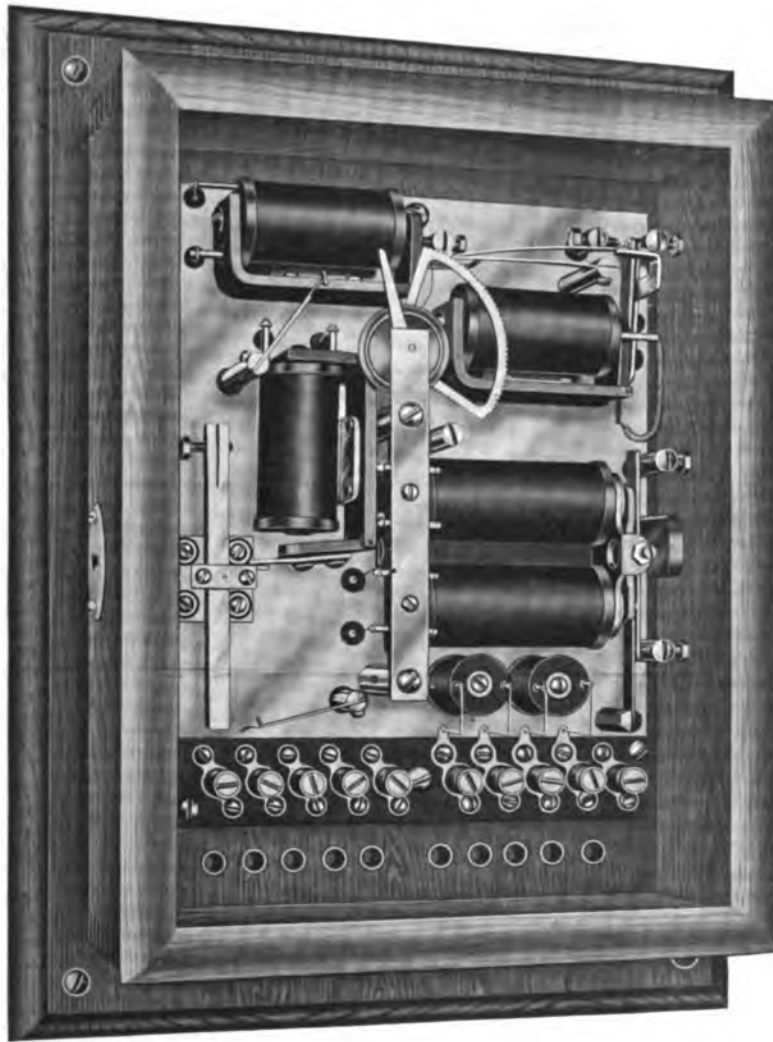
The telegraph cable between Nantucket and Martha's Vineyard has been sold by the United States Government to the Martha's Vineyard Telegraph Company. The Weather Bureau has managed the cable for over twenty years. The cable was laid when the station was established on the island in 1886, but a bad break occurred in it last fall, and as repairs would involve an expense of several thousand dollars the department decided to sell it. The Martha's Vineyard Telegraph Company bought a few years ago the Government cable between Wood's Hole and the Vineyard and has since had the use of the Nantucket cable by courtesy of the Government. The new owners are making the necessary repairs, and the cable doubtless will soon be in working order. This cable is important inasmuch as it carries wireless messages to and from the Nantucket wireless station, one of the most prominent on the Atlantic Coast. H. G. Haddon is the general manager of the company, with headquarters at Woods Hole, Mass.

Municipal Electricians.

The approach of the date for the holding of the convention of the International Association of Municipal Electricians, at Detroit, Mich., on August 19, 20 and 21, reveals an enthusiasm over the affair among members that promises the best results for the meeting. Already a good attendance is assured. A forecast of the character of the meeting may be determined by the quality of the papers to be read on the occasion. These embrace: "Combination Cables for Fire and Police Signal Systems;" "Moving Picture Hazard;" "Batteries for Signaling Systems;" "Testing for and Locating Faults in Electrical Transmission Lines;" "Electrical Equipment of a Fire Station;" "Modern Police Signal System."

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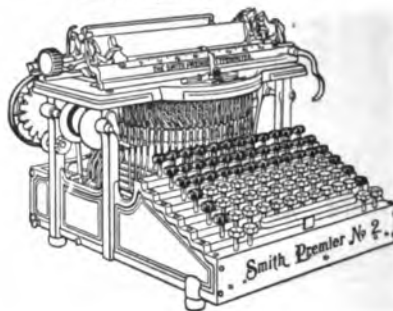
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JULY 16, 1908.

The Book Department of TELEGRAPH AGE has always been a prominent and carefully conducted feature of this journal. The desire has been and is to furnish our readers and buyers everywhere the readiest means possible of securing such technical books as they may require. Aiding buyers in their selection with advance information, which at all times is cheerfully furnished; promptness in sending books, filling all orders on the same day of their receipt, has brought to this department a generous clientele. Catalogues fully covering the range of books treating on the telegraph, wireless telegraphy, the telephone, as well as those on the general subject of electricity, together with the principal cable codes, will be sent to any one asking for the same.

Codes and Their Censorship at the International Telegraph Conference.

As already announced in Telegraph Age as something likely to occur, the final determining of the question by the Conference leaves the position of the code users virtually undisturbed. In confirmation of this Charles P. Bryan, American Minister to Lisbon, and Roland R. Dennis, the special representative of the Department of Commerce and Labor at the International Telegraph Conference there, cabled the following to the State Department: "A board of control consisting of one member each from England, France and Germany will be appointed to censor codes, but codes now in use will not be interfered with, although each government reserves the right it

has always had of rejecting any word offered. Codemakers are advised to offer their codes promptly to the board of control for censorship to secure a certificate. This will enable them to assure their customers that every word in their codes must be accepted, no matter in what country it may be offered."

Cable Protection from Trawler Depredations.

Following the consideration in the English House of Commons of the question relative to the protection of the submarine cables, so earnestly urged by the cable companies, various chambers of commerce both in America and Europe, and other commercial bodies, a committee composed of officials of the board of trade and the foreign office has finally been appointed to consider such complaints with reference to the damage done to transatlantic cables by trawlers on the Irish coast, and to devise means whereby this may be prevented in the future. Most of the fishermen are willing, it is reported, to stop fishing at the place on the Irish coast where the damage was done, but a small minority claim that the best fishing is obtainable there.

Doubtless this matter which has disturbed the civilized world, caused such heavy financial losses to the transatlantic cable companies, serious interruption to cable traffic and consequent annoyance and delay to widespread international interests, will be successfully met and overcome. Viewed in the spirit of modern commercial necessities which unite all nations in bonds of reciprocal obligations, it would be impossible to believe otherwise.

The theory, however, to which we hear frequent reference that protection to the submarine cables cannot be guaranteed outside of prescribed three-mile limit, even though interests like those under consideration, affecting the welfare of the world, are at stake, because of the lack of jurisdiction, is but the argument of the ill-informed and of timidity, to which the English mind, be it legislative or not, should be a stranger. It would be monstrous were such a hypothesis to prevail. The fishermen, for the sake of the greater good, should willingly forego fishing in waters, at least by deep-sea trawling methods, which alone renders their peculiar operations so disastrous to the cables, and if needs be find their catch elsewhere; if not then the physical argument represented by the presence of a British gunboat would probably be of a character to command due respect, even by recalcitrant Britons. The cables, which are the arteries of the world's life, must be preserved from all molestation. This is the view we believe the English government will eventually adopt.

A Few Words About Telegraph Age.

In technical telegraphic thought, of a character to instruct, aid and make easier through clear understanding the every-day work of the telegrapher, readers of Telegraph Age are receiving at present in each issue a bountiful and well-directed supply. This is apparent in the fine

article, now running in series, by William Finn, of the electrical engineer's office of the Western Union Telegraph Company, New York, an expert in his line, descriptive of the Barclay printing telegraph system, illustrated by numerous diagrams which afford a clear insight into the mechanism and working of a system that is attracting so much attention at home and abroad, and which is proving so highly effective in Morse transmission. Another feature is the short, pithy references explanatory of some specific form of apparatus of the Postal telegraph equipment, accompanied by a line drawing of the same, contributed by John F. Skirrow, the able associate electrical engineer of that company, of practical value to every man in the Postal service; and, third, the familiar articles bearing the standing head of "Some Points on Electricity," under which general title Willis H. Jones, author of the standard work, "Pocket Edition of Diagrams," etc., discusses the thousand and one problems in telegraphy that constantly confront the telegrapher, and a thorough understanding of which are so essential to his business welfare.

The amount of information embodied in the several articles referred to is without exception the finest ever furnished the telegraphic reader. It is of a character designed to benefit all in the telegraph service, and no telegrapher, from the operator at the key to those holding the highest positions in the gift of the telegraph, can afford to pass this opportunity to read, ponder and study the material so carefully prepared for his especial benefit.

In addition to all this the pages of Telegraph Age are filled with a variety of miscellaneous matter, original and contributed, pertaining to the general subject of telegraphy, and in its applied form to the wireless system, the cable, to its uses in railroading, etc.; also of the telephone in its relations to train despatching. Every department of the paper is carefully edited, accuracy governs its statements, and the editorial page reflects and discusses current telegraphic thought and events with dignity, power and authority because based on correct information and understanding. The world does not possess another telegraph journal of equal standing with Telegraph Age. It is read and quoted in all parts of the globe. It should properly go into the subscribing hands of every intelligent and progressive American telegrapher, the majority of whom are already its readers. This might be approximately accomplished if present readers who appreciate the paper, who believe in it and think it has earned their co-operation, would send in another name as a subscriber in addition to their own. Is it too much to ask our friends to identify themselves with such a movement? A little effort on the part of the individual would aggregate a splendid advance. As an evidence of appreciation therefor subscribers would receive in return even a better paper than is now produced.

The Closing of Non-Paying Offices.

It must be amusing to telegraph officials to read the testimony of the Westerner as it frequently appears, when his plaint, not to say venom, is directed against the telegraph. In particular, declarations made before the enquiring mind of the Nebraska railroad commission, as well as those of Missouri and Kansas, would go to show that a mistaken, if not guilty, and anyway a shortsighted, policy, animated telegraph management in those states at least, because a few small railroad offices, said to be non-paying, were closed; and further, it was vehemently asserted that such closing was occasioning the loss of many thousands of dollars monthly to the telegraph company's receipts. On what theory of reasoning this liberal and reckless estimate of income was based does not appear. What well-informed person, indeed, can imagine a situation in which a telegraph company permitted thousands of dollars worth of business to escape it!

However, evidence introduced in behalf of the telegraph went to establish the fact that the closed offices complained of in any single state did not turn in an aggregate amount of \$50 a month, a conclusion indicating such a paucity, if not to say limitation, of business, as to make the act of closing at once justifiable in the light of duty and reason on the part of the railroads jointly interested with the telegraph in the matter.

We do not care to make any charge affecting the code of morality governing the sturdy cross-roads citizen who will deliberately make affirmation such as that referred to, but no one can call us to account for having our opinion of him.

The Telegraph in Jamaica.

A report on the telegraph and telephone lines of Jamaica states that at the end of the fiscal year, 1907, there were sixty-four telegraph stations and seven telephone stations in operation under the postal system. In addition to these, the railway telegraph service had generally been available to the public. The total number of messages sent was 109,859, being 7,870 more than in the preceding year. All the telegraph offices had been overhauled. The cost of the telegraph system was approximately £7,885. As the receipts amounted to £6,614, and in the preceding years to £5,983 and £4,792, respectively, the cost was considerably in excess of the telegraph receipts. The public works department spent £7,444 on the ordinary maintenance of the buildings and telegraph, and £8,012 on earthquake repairs.

Telegraph Age is the leading journal of its class in the world, and should be in the hands of every progressive operator; \$1.50 a year.

The Association of Railway Telegraph Superintendents; Its Past, Present and Future.*

BY W. F. WILLIAMS,

Superintendent of Telegraph, Seaboard Air Line Railway, Portsmouth, Va.

In assigning to me this topic for a paper, your committee has given me such a wide scope that much I would like to say must be sacrificed to brevity. They surely must have mistaken my powers, supposing me to be at once, historian, recorder and prophet. However, it is given us all to learn the past; the present is ours; and it does not require the wisdom of a seer to read the horoscope of an organization whose watchword is "Go Forward."

Having had the honor and pleasure of membership with this delightful and profitable body but twelve of the twenty-seven years of its existence, I can speak of its early history only as I have gathered data from different sources. In 1882, several railroad superintendents of telegraph happened to meet in the office of Colonel Robert C. Clowry in Chicago. During a discussion of matters of mutual interest, Mr. W. K. Morley, of the Chicago and Alton Railroad, suggested the formation of an association, and on November 20, 1882 a meeting was held in Chicago, at the Grand Pacific Hotel, at which Mr. Morley was elected president, William Kline, vice president, and C. S. Jones, secretary. Committees were appointed to draft a constitution and a form of service card.

The second meeting was held at the same place June 13-14, 1883, at which the roll showed forty-three members, representing thirty railroads. At this meeting, Mr. Morley was re-elected president and P. W. Drew, secretary. How long, and how ably, and how pleasantly the latter has served in this capacity, we all know. Physicians say "a man is as old as his arteries." I have recently read with much interest that D'Arsonval, the celebrated French experimenter, has invented an apparatus to prevent the encroachment of age. By applying a high frequency of electricity, with vibrations as high as one hundred millions per second, the walls of the arteries are kept from hardening, and the blood, finding no resistance, speeds on its round giving health and life and youth—a veritable Ponce de Leon having been discovered. I am sure I voice the sentiment of each member of this organization, when I suggest that our first duty is to see that our beloved secretary is at once made the object of this wonderful rejuvenator, and in the event one application does not bring the desired result, we give him two, so that, paraphrasing a well-known couplet, we may say of him:—

Men may come and men may go,
But Drew goes on forever.

The third annual meeting was held in Philadelphia, September 17, 1884. The records of

each succeeding meeting show that interest never flagged. This coming together proved such a well-spring of thought, that the membership increased, each one eager to profit by the mutual interchange of experience and observation. Manufacturers began to take note of these gatherings, and knowing the inquisitive character of these men searching for the latest and best inventions to assist them in their work, decided that in one respect at least they were all "from Missouri." and at the sixth meeting in Boston, held in June, 1887, the first exhibits of telegraph and other electrical devices were introduced, and this has proved a most interesting feature. Recognizing the value of this innovation, the constitution of the association has been so amended as to permit manufacturers or their representatives to become associate members.

Meetings have been held in various states, from Canada to Louisiana, and from New York to Colorado. The one held in Wilmington, N. C., in May, 1899, was made memorable by the fact that we had as our guest of honor Thomas A. Edison, the greatest inventor of the age. The "silver anniversary" was held in Denver in June, 1906, and the meeting of 1907, in Atlantic City, still so fresh in our minds, brings us to the present time. The projectors of this movement "builted wiser than they knew." Our latest information places the total railway mileage in the United States, January, 1908, at approximately 230,000 miles of line. The membership of this organization represents 175,000 miles or 76 per cent of the whole. There are eleven systems, representing 11,450 miles, which have superintendents of telegraph, who have not identified themselves with us. The remainder, or 63,550 miles, is made up of small lines, varying from three to 1,900 miles with no telegraph superintendents. These figures speak for themselves. No more eloquent tribute could be paid to the popularity and value of our association, and no more forceful evidence of the alertness of the men having in charge the telegraph interests of the various railroads they represent and their determination to keep in the front rank and up to date in all that pertains to the betterment of the service.

The history of the association shows steady advancement in every way. The papers presented and topics discussed have been of wide range, and practical good has been evolved in these recitals of knowledge wrought out of the experiments, tests and trials of every day life. The quality of the discussions clearly reveals wide research and diligent investigation, a determination to get at the root of things. And so to-day we stand with problems old and new before us. In the field of electricity developments follow in such quick succession that one point is but fairly settled when another more important and far-reaching confronts us. The secular press tells us that a Frenchman has invented a little machine which will enable a man in New York to see what

* Read at the convention of the Association of Railway Telegraph Superintendents at Montreal, Que., June 24-26, 1908.

is going on in Paris. A Danish inventor is credited with having solved the problem of transmitting a photograph by wireless telegraphy. A scientist in Portland, Oregon, has invented the "Teleone," which enables parties conversing over the telephone to see each other. None of these are more improbable than others which have been fully demonstrated and are now in daily use.

One of the most vital issues before us to-day is despatching trains by telephone, a proposition which in the early history of our meetings would have brought a smile to the lips of the most credulous. But the handwriting is on the wall, the practical working of this admirable scheme has become an accomplished fact—and facts like fire make people move. I predict that the next decade will see a marvelous revolution along this line. Would not the "Teleone" be an additional safeguard?

So the future looms before us big with possibilities, weighted with responsibilities. We must work, study, experiment and together thrash out the knotty problems as they come to us, realizing that on us rests the upbuilding of the branch of railroad service entrusted to our care. Nothing "succeeds like success," and this association has been an unqualified success. What it has been it will be. The personnel is composed of men who are conscientious, honest and earnest—who appreciate the opportunity afforded them by these annual reunions for absorbing the best thoughts of men who are daily meeting and mastering the complex conditions which arise in the administration of the duties which devolve upon them.

I cannot close without saying that no agency has been so helpful, no source of information so fruitful to me in my daily life, as the meetings of this association. When to this is added the charm of its social feature, I feel that it is indeed a privilege to be "one of the boys." In the language of Rip Van Winkle, "May you live long and prosper."

Reduction of Telegraphing by the Use of Printed Forms.*

BY O. C. GREENE,

Superintendent of Telegraph of the Northern Pacific Railway Company.

When I was requested to write a paper on "Reduction of Telegraphing by the Use of Printed Forms," I was inclined to hesitate about complying, as it seemed to me there was not much that could be said to a body of men so well posted on this subject, as all of you undoubtedly are, that would be either interesting or instructive.

There is no doubt that where there are any considerable numbers of routine reports of similar character, the use of an intelligently arranged blank form materially reduces the amount of telegraphing. When the requirements are known, it is a comparatively easy matter to make up a blank

form, with suitable columns and headings, to meet them. An arbitrary designating letter should be placed at the top of each column and, when necessary, at the beginning of the line, which should, of course, be transmitted by the sending operator, to indicate to the receiving operator which space to use. Care should be used in selecting this index letter to use Morse characters which will not be apt to combine easily with those of the numbers or words most likely to follow it.

To obviate the difficulty the receiving operator is likely to experience in finding the proper place, especially if the blank is large and the sending operator inclined to be very ambitious, the spacing should be rather liberal and the subdivisions of the form should be separated by heavily ruled lines; otherwise, so many errors, due to operators using the wrong spaces, may follow, that the saving effected by the use of the blank is likely to be largely offset by the number of messages made necessary to secure corrections.

Multiplicity of forms is objectionable. As a general thing the telegraph tables are pretty well crowded and considerable time may be lost by operators looking for the proper blank when there are a great many to select from. While the use of blank forms is undoubtedly advisable when the amount and character of business justifies it, there is, therefore, a chance of overdoing it. Conditions frequently change, requiring additional or somewhat different information, and it will be found that many times a slight change in some of the established forms can be made to take care of this change in conditions, rather than making a new blank for the purpose.

The Northern Pacific Railway, which I have the honor to represent, being long and the general offices located at one end, necessarily carries on a great deal of its business by wire, hence a large number of forms are in use, which greatly reduces the volume of telegraphing.

Should any of the gentlemen present be interested, I will be glad to present them with complete sets of our blanks upon application.

The unaffected simplicity of the character of Andrew Carnegie was pleasantly illustrated lately when he attended the ceremony of laying the corner-stone of the new Pan-American Building at Washington, D. C., the erection of which his generosity has made possible. On the occasion in question as he approached the directors who were waiting to receive him, his first inquiry was for "Joe" Kerbey—Major J. O. Kerbey, an employe of the Bureau, whom he had not seen in years, and whose father he had known when the latter, at the time one of the older officials and himself were associated with the Pennsylvania Railroad. The meeting was a cordial one, and at parting the farewells were heartily spoken, Major Kerbey by reason of old acquaintance inadvertently exclaiming, "Good-bye, Andy!" to which Mr. Carnegie laughingly replied, "Good-bye, Joe!"

* Read at the convention of the Association of Railway Telegraph Superintendents at Montreal, Que., June 24-26, 1908.

Commercial Reports.*

BY JOSEPH P. CHURCH,

Chief Clerk, Telegraph Department, of the Wabash Railroad Company.

I find it about as difficult to write about commercial reports as the average operator does to make them up, but have tried to include a few practical suggestions looking toward simple but systematic methods of handling them.

I assume that it is not desired to consider the question of improving the present rules as contained in the tariff book, and indeed they seem, if intelligently carried out, to cover all requirements fully, and suffice in the hands of the telegraph company's experts to reach all delinquents, especially in the collection of deficits on error sheets. We recently received for collection an error sheet amounting to twenty-five cents, on a message handled twenty-one years ago, and a system so far-reaching could scarcely be considered inadequate.

It is difficult to lay down specific methods of instruction supplementary to the rules, on account of the difference in details on the various roads. I understand that the Western Union and Postal rules are practically the same, and that the manner of making reports is consequently similar, and there is probably no greater difference between them than obtains in the practice of the different roads handling commercial business for the telegraph companies.

On the Wabash, the reports are sent to the superintendent of telegraph, where they are carefully audited and corrected, and sent to the several Western Union superintendents, with consolidated statements on form 23, and a comparative statement with the same month of the previous year. The telegraph receipts, however, are remitted by the managers direct to the Western Union treasurer accompanied by form 65 (letter of transmittal), and a statement of manner and amount of remittance is forwarded to the superintendent of telegraph on form 1517, enclosed with the other reports.

Error sheets come to the superintendent of telegraph from the Western Union district superintendents, and are copied in the error sheet book, and then sent to the various offices with a receipt card and a sufficient number of postal cards, form 47, for adjustment. The receipts are carefully checked in and tracers kept going in such cases as are necessary, until the error sheet is returned. The money covering deficits is returned to the superintendent of telegraph with the error sheets and over-check vouchers, and remitted by him at the close of each month, together with a statement covering the error sheets returned.

When Mr. G. C. Kinsman, superintendent of telegraph, turned this matter over to the writer he suggested that the best way to secure prompt and correct reports was to insist upon careful and comprehensive records being kept by the man-

agers, and I believe this is the key to the whole situation. The time for the manager to begin to make up his report is when he handles the first message, and he should be required to keep a proper file of all commercial business separate from the railroad files, and each day by itself.

For the average office, a simple file of about three divisions will be sufficient for the current month. The first division should be large enough to hold all the messages handled during the month. The other two divisions will require only sufficient space for the messages held out to go in with the reports in one, and the error sheets and correspondence relating to them in the other. If nothing better is available, a table drawer for the messages and two large envelopes for the other divisions will answer.

Each day's business should be assorted carefully on the morning following and placed in alphabetical order by states, and after proper entry in the check ledger; copies should be made of the "uncollects" and "guaranteed" messages, and the service messages relating to them; also the "sent free," "half rate frank," and all government messages that go in with the reports, as vouchers for tolls, and these copies filed in proper order with the other messages for that day, care being taken to wrap or tie up each day's business separately for convenient reference. Service messages should be attached to the messages they refer to, with pins, or pasted on one corner.

Daily records should be made showing amount of the receipts and the number and kind of messages handled, both "sent" and "received," so that this information will be tabulated and ready for use in making up the reports. This record can be kept on the check ledger by writing suitable headings at the top, and will only require half of one page each month.

The original messages held out to go in with the reports can be kept in proper order in the second division of the file, until reports are made up at the close of the month, leaving the third division for error sheets and correspondence of the current month. Press or carbon copies of the reports should be made and filed with the messages of the same month. If the daily register form 40 is used, that and the check ledger can be kept on top of the messages in the first division of the file. In addition to the three division file, the manager will need a place to store his stationery supplies conveniently, with a separate shelf for the eight bundles of messages that he is required to keep on hand.

It will scarcely be necessary to provide a money drawer, as the manager can use one of his vest pockets for that purpose. The only Western Union office the writer ever managed took in between twenty and thirty dollars a day, and I carried the Western Union cash in one pocket and my own in another. This arrangement worked very well—the only difficulty being to preserve a proper balance between the pockets.

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If the managers can be induced to adopt some simple system of filing the messages and daily make copies of such as will be required to go in with the reports, a few minutes work each day will keep their files in good condition, and enable them to make up their reports easily and accurately at the close of the month, and reduce the number of error sheets.

Instructions to managers should be as brief and simple as possible, but they should be constantly admonished to study the rules carefully and obey them implicitly, referring doubtful points to the superintendent as they come up, and if they follow the practice of making up their reports daily they will have ample time to obtain advice on all obscure points and be prepared to send in their reports without delay at the end of the month.

Experience indicates that operators are frequently careless about complying with the rules to see that all messages are written on or attached to the sending blank, and that they often omit the filing time on "sent messages" and sometimes neglect to endorse the time on messages received, and time of calls on delayed messages. They should be specially cautioned on these points and also impressed with the necessity of taking receipts for messages delivered and filing these receipts with the day's business.

Canada's Fastest Man.

BY J. W. HAYES.

There were a bright lot of choice spirits in the old St. Louis Western Union office away back in 1876. Some were gray-haired, others were middle-aged, but more were of the younger contingent. All, however, were imbued with the spirit of energy, of loyalty, and the earnest desire to give value received for their monthly salaries. There was no shirking; "sojering" would not be tolerated by any member of the force, and any "chair warmer" would be scouted and reported to the officials by any member of the loyal force. But as a matter of fact we really had no "sojers" in those days. There was a certain amount of work to be done, a certain number of wires to man and just enough operators provided by the company to do the appointed work. The night force came on duty at 5 P. M., and were off when their wires were clear and never before. This was one incentive to get in and hustle, besides the other very proper inducement of wanting to do the square thing by the company.

I was very young at that time, but full of ambition to rise in the profession. I was assigned to the Long Horn wire, a single wire that ramified the entire length of Texas. Oh, my! but those were "hot" boys down there. We would exchange seventy-five messages each way with Galveston, fifty each way with Houston, about twenty-five each way with Dallas, and the same with Sherman, and about fifty or seventy-five more with way offices, such as Denison, Palestine, etc. We were obliged in consequence to

handle four hundred messages and more each night. There were no bonuses in those days, and as there was more or less fighting for circuit, we had to work fast. The operators in Galveston never pretended to send anything more than "g" for Galveston or "NY" for New York. No dates were transmitted and periods and "sigs" and all unnecessary trimmings were carefully cut out to save time. It was all right after one got acquainted with the business and had a supply of "dated blanks," and I still hold in reverential regard my friend, Theodore P. Cook, who worked this wire days and who always saw that I had an ample supply of dated blanks to anticipate and resist any rush. Mr. Cook is now general superintendent of the company at Chicago, but his official position, honorably earned, does not impress me with as much regard as the recollection of past courtesies in the way of swapping dated blanks. We always managed to get our "closer" before midnight and everybody worked earnestly to accomplish this end.

There were no women on the main office force at that time, and the only lady operator in St. Louis working for the company in 1876 was Miss Belle Wise, who was manager of a branch office at South St. Louis. William T. Loper, Thomas P. Wheeler, James A. Murray, Sidney B. Fairchild, James S. Nelson, Charles T. Day, John and Samuel Cassidy, Lara M. Boone, the Eckert brothers, John McNevin, Joseph McIlvaine, Paul Murphy, Michael Tully, William Manley, Dave Ryan, John H. Topliff, Fred B. Moxon, Robert W. Irwin and the writer made up the full complement of the night force. Charles J. Lawson, now of the New York force, was the night chief operator and a very well-meaning fellow he was. I have worked in many offices and with a great number of operators, but I never associated with a better lot of men and operators who had the interest of their employers more at heart than were those in St. Louis in 1876. I want to bear testimony to the fact that this harmonious state of affairs was largely due to the presence of Colonel Robert C. Clowry, at that time superintendent of the company, who was always ready to grant an audience to any complainant and equally ready to adjust any grievance. He was large hearted, just, easy of approach and was ever on the right side.

Robert W. Irwin, of the operating staff, was a Canadian by birth, coming from a country which has long enjoyed the honor of supplying us with much of our best telegraphic talent. It cannot be said that "Bob" Irwin was considered a good receiver in those days, but he was a great sender, and Fred Moxon had facetiously dubbed him "Canada's fastest man." The title was somewhat euphonious, Irwin liked it and made a continued effort to maintain his right to it.

One Sunday night "Sid" Fairchild was acting as temporary night chief and we had been working unusually hard to get off early. Irwin was working the New Orleans wire with Albert S.

Ayres at the far end. He had just finished sending seventy-five messages and was ready to say "closer," when New Orleans announced that his New York wires were down and asked St. Louis to relay one hundred and fifty messages for "N. Y."

"I can see my finish," ejaculated Bob Irwin. "I have been pasting 'Patsey' Ayres and here he comes back at me."

A hurried conference was held relative to the New Orleans request with Fred Moxon, who took the matter up with Night Chief Fairchild, and who good-naturedly consented to do anything that would please the boys. The New Orleans wire was presently cut in on a quartet table on four different sets of instruments, at each of which sat Loper, Day, Wheeler and John Cassidy. New Orleans was told to go ahead and "boil 'em down." "Get 'em in inside of an hour," tauntingly said St. Louis. A tightening of the key at the Gulf end and then came a fusillade of dots and dashes. "Drop out the date; don't say 'red' for night messages; skip the period; never mind the 'sig'; cut 'em to the bone."

Ayres outdid his best efforts on this occasion. So fast did the messages come that it took the combined talent of the four operators gathered about the table to copy them. Loper took the first, Wheeler the second, Day the third and Cassidy the fourth, with Loper to begin again on the fifth. Ayres was sending three abbreviated messages a minute and as the reputation of the St. Louis office was at stake there could be no breaking. When the last message had been sent by Ayres it was announced that he had transmitted one hundred and fifty messages in fifty-eight minutes, beating any known record.

"You're a dandy," said Ayres. "O. K. RI," replied Irwin, and there the incident closed as far as the office was concerned.

Over our dinner plates that night we discussed the great feat, for it really was a great performance, and it was decided to bury the incident, so far as relating it was concerned, as it was thought an innovation like this would not meet with the approval of the officials. We carefully watched the service messages between New York and New Orleans for the next few days, but, wonderful to relate, there was not a single request to have any of the Irwin bunch repeated.

Although it took four of the finest men in the country to do this work, Bob Irwin got the appellation of "Canada's fastest man," by which he was known to the day of his death. I am told that in a quiet little spot in a Texas cemetery is a marble slab, erected by his loving co-workers, which bears the following inscription:

"Sacred to the memory of Robert Waldo Irwin, telegraph operator. Canada's fastest man."

Telegraph Contest in Mexico.

The telegraphic contest in the City of Mexico, early in June, proved to be an interesting affair.

It was held at the rooms of the central telegraph office in Calle del Cinco de Mayo. A large number of local operators took part in the contest, and the jury was composed of Eduardo Picazo, the telegraph operator of the presidential office; Ruben de la Peña and Moises Salazar, all of them being experts in telegraphy.

The jury accorded the first prize to German Perez, who transmitted 107 words in three minutes without any error and with good spelling. The average was 35.6 words per minute. The second prize was granted to Eduardo del Prado, who sent 107 words in 2.45, but had two errors, and while the spelling was good, he used no punctuation in the whole message.

The third prize was granted to Agustin Morales, who transmitted 107 words in 2.50 making an average of 37.8 words per minute. He made an error and used no punctuation, his spelling being clear and firm.

The Glass Cover of a Stock Ticker As An Incubator.

An operator in a western telegraph office is sure that his invention for hatching chickens is better than an incubator or the old-fashioned hen, because these agencies of incubation never claim to make a one hundred per cent. hatch, whereas by his invention, on the very first trial, this result was obtained.

A short time ago he set sixteen eggs under the glass cover of a stock ticker in the operating room, with an electric wire connection to furnish the heat, a thermometer to record the degrees and a thermostat to watch the thermometer and to set at work an incandescent light to burn up the surplus heat whenever the thermometer registered higher than 105.

The other day he found sixteen little chickens under the glass, all as well and happy as if they had come to life under the protecting wings of a motherly biddy.

A lineman working fifty feet up in the air, at Denver, Colo., the other day, says the Daily News of that city, touched a live wire, was shocked unconscious in a moment, and lay, slowing burning to death, across a tangle of wires. A fellow workman was eight feet away on another pole, but he leaped through the air, caught with his climbing irons on the pole below the suffering man and a moment later was lifting him from danger. A slip, or the breaking of the climbing irons, would have meant instant death to the rescuer. But he did not slip, and the irons did not break; probably he never thought of the matter till his friend was safe. Deeds like these are heroic deeds. They add to the proof, already abundant, that war is an utterly unnecessary school for valor. They show that nerve and quick decision and readiness to stake all on the moment are qualities which peace can produce in quite as full measure as the tented field.

Adverse Legislation—Its Possible Ultimate Effects on Telegraphers.*

BY E. A. CHENERY,

Superintendent of Telegraph of the Missouri Pacific Railway.

Within a period of two years past, following their efforts and success in very thoroughly effecting a strong organization, a spirit of unrest, in keeping with the times, has pervaded the ranks of telegraphers engaged both in railroad and commercial fields, and it only needed the torch of disgruntled agitators to fan the flame through a hitherto unthought of method—legislation—into a blaze that it seems to the writer is fraught with possible disaster to the profession.

There are three classes of legislation, internal, state and national, that at this time seems to contribute as a demoralizing factor against the welfare of the telegrapher. Internal legislation may be considered that which applies as between the telegraphers as a class, and the corporations with which they are identified.

Nearly all the trunk lines at this time, following the custom of having working schedules with employes in the various trades, have entered into similar relations with their telegraphers, and it is but fair to say that such a policy if made and carried out with the fundamental purpose of preventing abuses to a particular class, is beneficial in a general way, although personally the writer cannot believe that all the rules and particularly those relating to seniority are conducive to the encouragement of ambition and advancement.

Some of the schedules are secured after a long struggle, due to the fact that the committee delegated to frame the requests often assume an attitude of hostility to the management and convey the impression that the employer is a sworn enemy and must be so treated. In the preparation of such agreements the principal object should be to insure as nearly as possible a uniform working arrangement for all divisions, providing reasonable hours of service, an opportunity for a hearing in the event of fancied or real injustice and compensation commensurate with the duties and experience required, location and other conditions being also considered.

These schedules are made to be observed and managements are anxious that the provisions are not violated, recognizing in them as sacred an obligation as is expected of the employes in complying with the rules laid down for their guidance by the company.

There is a certain element, however, who rebel at any order that may be issued; who look upon a letter of inquiry for desired information, as an attempt to harass them, and the writer has known of several cases where the employe before making reply to such queries has first communicated with his chairman to ascertain if the superin-

tendent or other superior officer was not transgressing upon what he considered the conferred rights of the schedule.

Such an element find it very convenient to complain of alleged violations on the part of their superior officers and at the same time criticize the actions of their selected committee in permitting the practices which they consider burdensome to continue. They are usually handy with pen and speech in vituperation and consider an ideal schedule only that which contemplates a stated minimum salary with liberal compensation in addition for handling tickets, freight, telegrams, express, mail and all other duties that may be assigned. These extreme examples are not altogether rare and are of such a character as to breed discontent among the larger number of employes who are taught that their awakening can only result from a following of such precepts.

Could these employes be but brought to a realization of the sense of allegiance they owe themselves and their employer and strive to qualify and merit promotion, it stands to reason that their prospect for advancement would be greater.

What commercial business house could succeed if their salesmen banded together in an effort to force rigorous rules and to prevent any one man, regardless of his experience, from serving at a lesser rate than his older and necessarily more competent comrade. Would the head of such a concern feel disposed to offer a partnership in the business to one of that class of employes, or would he rather choose from among those who had at all times proven competent and loyal to his interests?

Not content with the working schedules they had entered into with their employers, presumably in good faith, the telegraphers as an organization conceived the plan of enlisting the efforts of their state and federal representatives in an endeavor to secure shorter hours of service, relying on their organized strength to maintain the present or an advanced wage scale, and state and national legislation relating to the employment and regulation of telegraphers has been active within the past two years.

Maryland was the first state to enact a law prescribing eight hours for telegraphers engaged in reporting trains, and the example was soon followed by other states, in many of which the law was to become effective sixty days from date of passage, allowing the railroads scarcely any time for preparation. In seeking this legislation, the telegraphers who were delegated to assist in having the acts become a law neglected to call attention to the fact that train despatchers and telegraphers working tricks requiring constant and close application were then and have been for years working but eight hours daily, and the attempt was made to have such hours apply to all without regard to the responsibility assumed; no distinction being made as between a despatcher directing train movements and telegraphers who

* Read at the convention of the Association of Railway Telegraph Superintendents at Montreal, Que., June 24-26, 1908.

mechanically receive and deliver such instructions to the trainmen who are to obey them.

No one familiar with the work at the various stations of a railroad would honestly make the claim that the "mental strain" on a telegrapher on duty at a station where the number of train orders received varied from two to ten each month, or even that number in each twenty-four hours, was particularly severe or compared in any manner with the duties in a despatcher's or heavy division office, where close application is required and the work correspondingly heavy. In the one case the hours of duty may extend over a period of eleven hours each day, but the actual work is not heavy and there are in many cases long periods with nothing whatever to do. In the other case, the hours of duty are fixed at not more than nine and many at eight or less.

A case where one accident resulted in great loss of life which occurred through the negligence of a telegrapher failing to display his signal to one of the trains involved, has been recited before every committee having such bills to consider. The claim was made that the telegrapher at fault was overworked, but the full facts in the case of his companion operator going to a neighboring city without securing permission from the despatcher or superior officer, or with their knowledge or an understanding made by the two men to double, was not explained.

In a few of the bills introduced a modification was suggested that the law should apply only at stations where the number of passenger trains passing in a twenty-four hour period exceeded eight in each direction, but this attempt to regulate the hours of service to the work performed met with vigorous opposition and protest and demonstrated the fact that methods absolutely unfair are resorted to in an endeavor to gain their point.

While these and hundreds of other bills directed against the railroads were being discussed in the several states, a bill was under discussion in the House and Senate providing a maximum of sixteen hours during which railroad employes affecting train movements would be allowed to labor and stipulating the number of hours of rest such employes should have before resuming duty. No particular class was mentioned, and in the last days of the session after the bill had been favorably reported to both Houses, a proviso was added by the House to the second paragraph reading as follows:

Provided, That no operator, train despatcher or other employe, who by the use of the telegraph or telephone, despatches, reports, transmits, receives or delivers orders pertaining to or affecting train movements, shall be required or permitted to be or remain on duty for a longer period than nine hours in any twenty-four hour period in all towers, offices, places and stations continuously operated night and day, nor for a longer period than thirteen hours in all towers, offices, places and stations operated only during the daytime, except in case of emergency, when the employes named in this proviso may be permitted to be and remain on duty for four additional hours in a

twenty-four-hour period on not exceeding three days in any week.

In this form the bill was sent back to conference, and after further discussion a second proviso was added reading:

Provided further, The Interstate Commerce Commission may, after full hearing in a particular case and for good cause shown, extend the period within which a common carrier shall comply with the provisions of this proviso as to such case.

The bill so amended passed both houses and was signed March 4, 1907, to become effective one year after its passage, and did go into effect on March 4 of this year.

Considering the welfare of the telegraphers, I cannot believe that shorter hours of service was wanted or desired so much as a maintenance of an established wage scale and constant employment and the advantage of fitting themselves for promotion. No request by a committee for a reduction in the regular hours of service was ever made to my knowledge, and these experiments in legislation of licensing telegraphers, the prohibition of employing any one under twenty-one years of age and other similar measures that have received attention, were directed at the railroads through the efforts of the leaders of the telegraphers' organization to force a closed shop and to create a demand that would apparently benefit the present employes, but which is now acting as a boomerang.

The telegraphers, in what I believe mistaken zeal for the general good of the profession, have in every way possible discouraged the teaching of the art and as a result the timber from which such material has been made of recent years has not been such as to justify the faintest suspicion that the percentage of future officials will be among the high figures of the past. The president of the telegraphers' order in discussing this feature at Washington, recently, admitted that less than 365 students each year was authorized and permitted to be taught telegraphy by members of his order, although claiming a present working force of upwards of 53,000 telegraphers in the United States. At this rate of sanctioned manufacture the last of the 53,000 telegraphers now employed would be released from active service in approximately 145 years. These figures would be changed somewhat if the mortality were lengthened or comparatively few additional positions created.

The biblical paragraph, "What profiteth a man" may be converted into "What profiteth the telegraphers as a class if they gain a few additional hours of idleness by losing their prospect for advancement."

A few are temporarily benefited in the shortening of their working hours, but is this conducive to a promising future? The passage of such laws necessarily has a demoralizing effect. Its tendency is to provoke discontent and stifle ambition; it encourages a revolution in methods and its ultimate effect cannot but be harmful to the telegraphers as a class. Already some of the

roads having adopted the telephone as a substitute for the telegraph in the handling of trains, their officers wonder why they were so long in discovering its advantages.

Other roads are falling into line, and it is safe to say that within a very few years the telephone will be in service by all the roads for such purposes of communication as it requires. When this becomes the universal practice, the offices now manned by telegraphers will then be in charge of young men or young women employed in their home town, and who may be put to work after a coaching of but a few days, and many of the skilled telegraphers will then be relegated to the scrap heap of "has-beens."

Does it argue for the good of the telegrapher that the telephone which may be operated by anyone is rapidly being installed; that printing telegraphs are being perfected and put into service, and that the best thinkers along these lines are working much more than nine hours a day in an effort to devise some means of getting away from the aggressiveness of a class of employes who consider the interests of the railroads as secondary to their obligation to the order they represent?

The railroads under existing methods are necessarily obliged to secure their agents and train dispatchers from the telegraphers, and from such employes higher officers heretofore have been selected. If a departure from such methods in the use of other devices—which now seems more than probable—is made, will not the personnel be strengthened by a selection more desirable, generally better qualified and more reliable and a new class of employes evolved whose individuality is not stifled by their allegiance to a false god?

Telegraphers' Cramp in England.

The Postal Telegraph Clerks' Association of England has been successful in getting the serious question of telegraphers' cramp considered by the home office committee, the representations of the association in this respect being finally received in a sympathetic spirit. A local paper in discussing the matter had this to say:

"It is not unusual to find that a few years' work is sufficient to play havoc with the arm and nervous system of an operator. Hitherto it has been the custom of the department to treat the disease as of purely nervous origin, due either to the sufferer's own fault or to an inherent tendency due to particular nervous temperament. The punishment has taken the form of, first, arrestment of increment; second, reduction of salary, or, third, compulsory retirement.

"Many excellent men, some of them with considerably over twenty years' service, have been so punished, and about twenty instances were cited to the committee. It was contended by the delegates that the cramp does not detract from the sufferer's general condition of health or decrease his efficiency in other directions than key

signaling. Suggestions were made with a view to a remedy, among them being that telegraph operators of longer service should not always be selected for the busiest and most important circuits; that six hours a day be the maximum period for an operator sending on a Morse circuit; that non-manipulative duties, such as clerical work, should be more evenly distributed; that ambidexterity should be encouraged; that the Morse key should be improved; that the staff should be less crowded and uncomfortable; and—most important of all—that persons suffering from cramp should be treated sympathetically."

From statistics furnished it is apparent that what is known as writer's cramp is more prevalent among telegraphers in England than in the United States. Many English telegraphers assign as a reason for this discrepancy the use of the clumsy Morse keys used in that country. English operators as a means of amelioration of their condition, owe it to themselves to look into the merits of the dot-making devices so extensively used by telegraphers in this country. These instruments, together with various forms of transmitting typewriters, have no doubt contributed to lessening the disease mentioned in America.

American Institute of Electrical Engineers Meet in Convention.

The twenty-fifth convention of the American Institute of Electrical Engineers met at Atlantic City, N. J., on June 29. During the session of three days many important papers covering electrical subjects were read and discussed. A paper entitled "Electricity as Viewed by the Insurance Engineer," was read by C. M. Goddard, secretary of the Underwriters' National Electric Association, Boston, Mass. Mr. R. A. Fessenden read a paper entitled "Wireless Telephony," in which he gave a brief historical review of the development of wireless signaling. The first period began with the work of Henry in 1838 and ended with 1902. The second period, beginning with 1902 and continuing up to the present time, has been marked by the gradual abandonment of the damped-wave coherer system and the substitution of the elements of the sustained-wave non-microphonic contact type. A good deal of the new apparatus devised in this work is described. Regarding the possibilities of this system, Mr. Fessenden thinks there is no immediate prospect of its taking the place of local exchanges, but there is a good field for it for long-distance lines. For transmarine work and communicating between ships it is exceptionally well suited. Regarding the range of transmission, there is little difficulty governing distances of one hundred miles. Beyond this atmospheric absorption begins to make itself felt. The author also explained his views of the retarding effect which the various governments of the world have exerted on the development of this important new art.

Railway Telephony.*

BY W. E. HARKNESS.

Sales Engineer for the Western Electric Company,
New York.

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(Concluded from page 468, July 1 issue.)

The New York Central equipment has been subject to careful observation by the operating officials of the road and it has been found that the trains on this section of the division have been handled with safety and in addition with greater speed than when operated by telegraph. In fact, it has been found that the despatcher operating this circuit is busy about fifty-five per cent. of his time, while the other despatchers handling the same trains on the remaining sections of the same division are kept busy all of the time. This, however, is not the greatest advantage of the system. It has been found that the despatchers and the operators are in closer touch with each other on the telephone circuit, and assume more personal relations due to this more detailed information regarding the movement of trains is transmitted when conversing by telephone than was possible by telegraph. The number of small matters which are called to the attention of the despatcher affecting the movement of trains can be taken care of instantaneously and instructions issued as quickly as the information is received. If necessary the conductor of the train or the engineman can be called to the telephone and the details of existing conditions received at first hand rather than through an operator. It further permits of the superintendent of the division, or higher officials, to talk with the man on the ground, in case of accident or unusual delay, and issue instructions if necessary. The telephone circuit has been found to operate under all conditions of weather which ordinarily would interfere with the operation of a telegraph circuit.

The amount of money which it is possible to save in this way cannot be estimated, but it is greatly in excess of the cost of the telephone line and equipment necessary to accomplish these results.

The Chicago, Burlington and Quincy Railway during the early part of this year also installed the telephone for despatching service on their main line between Aurora and Mendota, a distance of forty-six miles; Aurora and Chicago, a distance of thirty-seven miles, and between Aurora and Savannah, a distance of one hundred and eight miles, in all about one hundred and ninety-one miles.

The method of wording and issuing the orders on these circuits is practically the same as that used on the New York Central, but the method of selective signaling and the apparatus used is quite different. Each station is equipped with a special transmitter arm and head telephone with

the necessary induction coil and batteries. A high resistance and high impedance relay is bridged across the line at each station. A selective device consisting of a clockwork on which is mounted a commutator having two narrow segments, diametrically opposite each other, is also located at the station. These segments are connected together and form part of the circuit of a locking relay controlling the signal bell. The circuit of this locking relay is completed through a brush resting on the surface of the commutator, which momentarily makes contact with one of the segments during each half revolution of the commutator, and also the contacts of the bridged line relay.

The clockwork is prevented from running continuously by a stop which is electrically controlled. The stop or starting relay, as it may be called, is controlled by the relay bridged across the telephone circuit and is operated when an impulse of current is sent over the line by the despatcher. The mechanical arrangements are such that after the clockwork has been released and starts to run the commutator is permitted to make a half revolution. The continued operation being prevented by a mechanical stop and the mechanism is again ready for the next call. By this arrangement the direction of rotation of the commutator is always the same, no reversal being necessary to restore it to normal. The half revolution of the commutator is completed in thirty seconds, and by locating the segments on the commutators at the various stations at different points on the circumference it is possible to have the local circuit of the various stations closed in successive order, or according to any prearranged plan.

At the despatcher's office a master clock is installed which differs from those at the stations in that its commutator contains thirty segments on each half or a total of sixty, the ones diametrically opposite being connected in multiple. This commutator is stationary and contact is established with the segments by means of a revolving brush. The motion of this brush is controlled in the same manner as the commutators at the stations, and during a half revolution it makes contact consecutively with each of the thirty segments on the commutator and then comes to rest and is ready for the next call. Each of the thirty segments on the commutator of the master clock is connected to one contact of an individual key, the other contact of the key being connected to the winding of a local relay, its circuit being completed through the brush of the master clock. When operated this relay sends an electrical impulse out over the telephone line.

From this it will be seen that thirty individual keys are provided, one for each station. These keys when depressed are mechanically locked and are arranged so that when the master clock comes to rest after making a call all of the keys which have been locked are released and restored to normal. The despatcher is also furnished with a

* A paper read before the New York Telephone Society.

starting key which when depressed sends an impulse of current out over the telephone line and starts the master clock and all of the station clocks, which continue to run for thirty seconds, being then stopped mechanically as previously mentioned.

To signal or select a station the despatcher depresses the individual key associated with the particular station desired and then starts the clocks by pressing the starting key. As the brush on the master clock passes over the segments on the commutator, and when in contact with the one connected to the station key which has been depressed, it completes the circuit of the local relay, sending a second impulse of current out over the line. At the instant this second impulse of current is applied to the line the brush and segment of the particular station desired are in contact and the locking relay controlling the signal bell being operated by the bridged line relay causes the bell to ring, which continues until the relay is released by the station operator pressing a key. No "answer back" signal is given to the despatcher, so that he is unable to tell whether or not the signal has been received until the operator answers. This arrangement permits of more than one station being called at the same time, in fact, it is possible to call all of the stations, if so desired, in the thirty seconds. The average time for an equipment of thirty stations would be fifteen seconds, which is greater than that of the system used by the New York Central and, further, while some stations can be called in three or four seconds, it will require twenty-six or twenty-eight to call others.

The great advantage which is claimed for the system used by the Burlington is the calling arrangement which permits one or all of the stations being called in one operation by the despatcher. It is believed, however, that this is not as important as one would imagine, as it is seldom necessary to call all of the stations, three or four being the usual number, and as it takes from one to five minutes to raise a single station by telegraph, and since with a selective device it is possible to call, say, three stations in twenty-four seconds, it is so great an improvement over the old method, a further gain of four or more seconds is not of any great importance. The multiple calling has a further disadvantage in that two or more operators are liable to come in on the circuit at the same time and break in on the conversation and cause confusion similar to that produced by telephone operators breaking in on a call circuit and in straightening out a situation of this kind more time is lost than is gained by calling several stations at the same time.

The New York Central system, taking eight seconds for calling each station, permits the despatcher to call one station and while instructing the operator at the first station to prepare to take an order, call the second station and while instructing the second operator call the third, the

whole transaction taking about twenty-four seconds without confusion.

So far all of the telephone apparatus furnished for despatching purposes has been special and the indications are that this will continue for some time to come, as each railway official has ideas of his own which he naturally thinks are the best and which he will insist on trying.

In addition to the roads previously mentioned as actually despatching by telephone the following large roads are installing telephone despatching systems and expect eventually to operate by this system exclusively: Illinois Central, Lake Shore and Michigan Southern, Canadian Pacific, Chicago, Milwaukee and St. Paul; Chicago and Northwestern, Northern Pacific. Other roads, such as the Delaware, Lackawanna and Western, Erie, Baltimore and Ohio, Seaboard Air Line, Southern, Delaware and Hudson, Queen and Crescent, Pennsylvania, Michigan Central and Union Pacific are making investigations of telephone despatching and without doubt will shortly install such systems.

I find in looking over the Official Railway Guide that out of some 1,100 railroads operating 257,000 miles of track, 213 roads, or nineteen per cent., are operating their lines by telephone and have no telegraph connections whatever. The total mileage of these roads is 17,358, or six and three-quarters per cent., of the total railroad mileage.

BLOCK SIGNAL TELEPHONES.

A further use of the telephone in connection with the movement of trains is in connection with the operation of block signals. The usual method of communication between block signal towers is by means of telegraph or bell signals. Some roads are using the telephone for this purpose and have found it superior to either the telegraph or bell signals, as it enables more detailed information to be passed between the adjacent towers and movements of trains effected which was not possible under the old systems, and in this way facilitating the traffic and thus reducing the operating expense caused by delayed trains.

Of the various railroads approximately one hundred are using block signals, and of these seventy-seven are using the telegraph, sixteen the telephone and ten bell signals. About eight per cent. of the trackage operated is handled by telephone, two per cent. by bell signals and the remaining ninety per cent. by telegraph. The largest user of the telephone for this purpose is the Atchison, Topeka and Santa Fe, which operate their 1,800 miles of track by telephone exclusively. The Burlington is operating some 1,100 miles and the Illinois Central about 800 miles of track in the same way.

SIDING TELEPHONES.

On many of the western roads there are sidings located at some distance from the regular stations, and in some cases between stations, where trains must wait the passing of other trains. Telephones are located at these siding in booths or boxes on

the poles, and the train crews report their arrival and the passing of other trains, to the nearest station and receive instructions governing their movements. This arrangement does away with the opening of many telegraph offices which would otherwise be necessary. Some railroads equip their trains with portable telephone sets, which may be used for this purpose or in cases of accident. In this case connection is established with one of the telephone or composited telegraph lines and the nearest station called.

* * * * *

An Old Telegram.

A telegram transmitted nearly sixty years ago necessarily bears the unmistakable marks of a venerable age. The "Toronto, Hamilton, Niagara and St. Catharine's Line," long since absorbed in the Great North Western system, was one of the first telegraph constructions in Canada. A message dated November 22, 1848, sent from London, Ont., to St. Catharines, over this line, was read at the recent convention of the railway telegraph superintendents at Montreal, and awakened interest, inasmuch as it was regarded as a relic and a reminder of the early days of the telegraph. This telegram has since come into the possession of Telegraph Age, being presented to the publisher by Mr. W. Marshall, of Toronto, superintendent of construction of the Canadian Pacific Railway Company's telegraph.

The contents of this old message are immaterial at this date. Doubtless, however, it was a family matter that brought it into existence, for the surname of the addressor and of the addressee were the same. Quite likely after this long interval of time, both have passed from earthly scenes, and this "telegraph" message, for the word "telegram" was then uncoined, in its resurrection is as mutely impassive in its forgotten correspondence, its faded ink and old-fashioned type, as the exhumed mummy of a remote age. But it is with the quaintness of the form and expression of the message blank that mainly arouses attention. The printed portion of the blank follows more a letter-head style than its modern prototype, a suggestion further strengthened by the fact that the lower part of the sheet is left free for the filling in of the written communication. Simplicity itself is reflected in this message blank. It bears no bustling official look; no binding conditions are printed thereon. It rather reflects, in its appearance, the moderation and tranquillity of method observed in its day and generation, when a dozen or two messages constituted a good day's business at any given point. Across the face of the blank is printed the "tariff of prices; from St. Catharines," which it seems were "for every ten words, to Toronto, Hamilton, Niagara Falls, Chippewa and Niagara, 1 3;" and "to Lockport and Buffalo, 1 10½." The presence of printed lines proclaiming "communications strictly confidential," and "communications delivered free of charge," would

indicate in the one case a becoming desire on the part of the telegraph company to impress its patrons with the fact that a high sense of business morality governed its transactions, and in the other an early recognition of the services of the messenger boy.

"O. K."

A correspondent writing to a newspaper has this to say regarding the origin of "O. K.":

"I note what you say about the origin of the practice of using the letters 'O. K.' to signify 'Correct' or 'All right.' It seems to me that your informant is wrong. I am quite sure that this practice originated during the Clay and Polk campaign. At that time the writer was a boy, living in Booneville, Mo. You all know what a lively campaign the Clay and Polk campaign was. Mr. Clay was the idol of the Whigs, and was affectionately called 'Old Kentucky.' Those who favored his election put up their flags on ash poles, at all the crossroads, country taverns, and wood yards on the river, while the Democrats put up hickory poles with polk bushes at the top, the Whigs using for a flag a square of white cloth with the letters 'O. K.,' signifying 'Old Kentucky.' The Democrats used a streamer with 'Polk and Dallas, Oregon and Texas.'

"The town of Booneville boasted two newspapers, one The Observer, a Whig paper, conducted by one Caldwell, a very brilliant young man, the other, The Booneville Register, conducted by one Ira Van Nortrick. Toward the close of the campaign the editor of The Register came out in a very salty editorial, denouncing the ignorance of the Whigs, and demanding to know 'What does O. K. mean, anyhow?'"

"Caldwell came back at him with the information that he would find out that 'O. K.' meant 'Oll Korrekt' in November. The expression took like wildfire; the boys yelled it, and chalked it on the fences. Like other slang, it seemed to fill a want, and upon the inauguration of the telegraph in 1846, the adoption of 'O. K.," I was informed by one of the first operators in the country, Mr. E. F. Barnes, was introduced to the business public, as he was one of the parties organizing the system of signals used by the company. Then it passed into general use. Of course, Missouri was not the only place where Mr. Clay was called 'Old Kentucky.' A favorite song of the Whigs, both in Missouri and Kentucky, only a line or two of which I can now call to mind, sung to the tune of 'Old Dan Tucker,' ran about thus:

"The balky hoss they call John Tyler,
"We'll head him soon, or bust a biler;

Chorus:

"So get out of the way, you're all unlucky;
"Clear the track for 'Old Kentucky!'"

If you are not familiar with TELEGRAPH AGE, a postal card request will bring a sample copy to your address.

Composite Telegraph and Telephone System.

BY E. R. CUNNINGHAM.

The Interurban Railway, of Des Moines, Iowa, has worked out for itself a composite telegraph and telephone system which differs very materially from any other in general use, and has many features to recommend it especially for interurban despatching lines. The following description may be of interest to those who have occasion to operate despatching lines under similar conditions:

The system originally installed was intended for the telephone despatching of the cars on the Beaver Valley Division of the Interurban Railway. It consisted of No. 9 BB galvanized iron wires from Des Moines to Moran Junction, where the line branches, the branch line running four miles to Woodward, the main line twelve miles to Perry. The Perry end of the main line is thirty-six miles from Des Moines, and the Woodward end of the branch line twenty-eight miles from Des Moines. The telephone system was carried on standard cross-arms on the same pole and below the high-tension transmission line, and was transposed every ten poles by a transposition pin and insulator designed especially for this use. The telephones were of standard make and bridged on to the line in the usual manner, one being used at each station and passing point on the line. In all, there were fourteen telephones bridged onto the line. The despatching switchboard is located at the Des Moines end of the line, and is a fifty-line central energy board with ten lines now wired up, one of which is the Beaver Valley despatching line. Besides being used for despatching purposes, the latter line was also used for transmitting messages arising from freight, express, passenger and other departmental business. It was found necessary, therefore, either to build another telephone line for the commercial business or equip the present line with telegraph instruments to make a dual use of the one line. The latter plan was found to be much the cheaper, as it involved but a nominal expense for the telegraph instruments, and was adopted not only for that reason, but because it was thought to give a more extended and reliable service than two separate telephone lines. It would have been quite natural in adopting the telegraph system on this line to fall into the well-beaten path of American telegraph practice of connecting the telegraph instruments in series. To do this, however, necessitated the use of at least eight condensers cut in the telephone line.

Since both sides of the telephone line are used as one side of the telegraph line, it is necessary, at each intermediate telegraph station, to cut in a condenser in each side of the telephone line to open the line to the direct current telegraph current and cause it to flow through the telegraph key and relay.

In using the telephone it is necessary to signal and talk through these condensers, and while they do not interfere with the small undulating voice

currents used in talking, they do seriously interfere with the signaling current, especially where there is a large number of telephone instruments bridged onto the line. Condensers are very delicate, and are an expensive fixture on a long despatching telephone line, especially where it parallels and is in close proximity to high-tension and power lines. They are so sensitive that they are continually being knocked out by lightning, induced static charges or stray currents from other lines. If this occurs and the condensers are not kept in proper order the telegraph current will interfere with the telephone service. To avoid the use of these expensive and troublesome condensers and to secure other very desirable results that will appear later, we decided to connect the telegraph instruments in multiple, more after the Continental or European telegraph practice than the American, the telegraph relay being cut in, between the neutral point of a suitably wound impedance coil, bridged across the telephone line and grounded through about 1,000 ohms resistance.

The telegraph key, which is of the open-circuit type (key without a closing switch), is cut in from some source of energy in multiple with the relay. As we have the 500-volt direct current circuit at each telegraph station, we connect the key between the fourth and fifth lamps of a series of five sixteen-candlepower lamps to obtain about 100 volts on the telegraph line. For the fifth or ground lamp we used four sixteen-candlepower lamps in series multiple, which have the same resistance as one lamp; but, being in multiple, there is no danger of the ground side of the series opening and thus throwing full potential on to the telegraph line.

The sounder is connected in the usual manner, either with a local battery, which in this case can be ordinary dry cells, as the sounder is on open circuit when not in use, or by shunting the ground light in a series of five incandescent lights in the same manner as power is obtained on the line.

All telegraph instruments on the line, when connected in multiple, are, of course, connected up exactly alike, and require but one impedance coil to each telegraph station and no condensers. They are all independent of each other, and any one of them can be cut on or off the line at any time by opening the double-pole knife switch.

Another advantage of the multiple system is that it is impossible for the operator to go away and leave the line open by leaving his key open. If the series system were used it would require two impedance coils at each intermediate telegraph station and two condensers. Another very important feature of the multiple system is that the neutral point of every impedance coil is connected to ground through the relay and about 1,000 ohms of non-inductive resistance. This in lines paralleling high-tension lines serves to carry off the static charges which otherwise would accumulate on the telephone line.

It is a well-known fact that both sides of the telephone line sometimes act as secondaries to the high-tension line and that a high and dangerous accumulation of static electricity is induced on the telephone line. These impedance coils are so wound and connected that they act as impedance to the undulating voice and alternating current telephone signaling current flowing from one side of the line to the other, but do not act as impedance to current flowing from both sides of the telephone line to the ground. Therefore, the static or other stray currents of small volume but high potential can pass unimpeded from both sides of the telephone line to the ground.

On account of the sensitiveness of the telephone receivers to even a slight flow of current, they are very seriously affected by small induced currents from other lines which parallel the telephone line, especially from lighting, power and high-tension lines. It is important, therefore, to have a well-constructed telephone line. It must be perfectly balanced as regards resistance, impedance, inductance and capacity; that is, it must have the same resistance, impedance, inductance, and capacity in each side of the circuit. Not only must each side total the same, but it must have the same amount between each talking station. The line must be so transposed that each leg of the circuit shall occupy and travel in the same zone or position relative to other parallel lines and conductors half of the distance between each talking station. The line must be properly insulated, not only from all other lines, but from the ground, and all other objects having capacity which would unbalance the circuit by adding capacity to one side or the other.

The greatest source of trouble, and the one most difficult to overcome on telephone despatching lines, arises from two opposite and opposing conditions, both of which seem to be necessary—one for the operation of the line and the other for the protection of the same—from a dangerous difference of potential between both sides of the telephone line and the ground likely to be induced from the high-tension lines. A difference of potential of 300 to 400 volts will discharge across the protectors usually employed on the line, leaving the line safe, but not very serviceable, as the capacity of the grounded side is increased so as to unbalance the circuit and cause a continuous flow of current through the receivers on the line from one side of the circuit to the other, making the line so noisy that it is practically inoperative. These protectors or ground devices are usually carbon plates separated about 1/100 inch by perforated mica or celluloid, one being connected to one side of the telephone circuit and the other to the ground. When a discharge takes place from one carbon plate to the other it usually blisters it and leaves the line permanently grounded, and it is then necessary to go over the line and clean the protectors. Dust and dirt are also likely to collect in these protectors and ground the line with the same result.

Thus you are between the "devil and the deep sea" all the time. You must not let your line

touch the ground, yet you must keep it within 1/100 inch of the ground in many places. It is from these two opposite and opposing conditions that nearly all the trouble on telephone lines paralleling a high-tension line arises.

Since the installation of the telegraph instruments on the Beaver Valley despatching line, most of the troubles mentioned have disappeared on account of the neutral point of the impedance coils being grounded and carrying off the static and other stray electricity which otherwise would accumulate, discharge across the protectors and blister them.

Since it is necessary to have a well-balanced line to prevent disturbances to the telephone from high-tension and other parallel lines, the use of the telegraph on the same line as the telephone does not necessitate any further care than would be necessary for any satisfactory operating telephone line.

A composite system not only doubles the amount of business than can be handled over a single line, but is much more reliable and convenient than either a telephone or telegraph line alone, because the telegraph and telephone service are not subject to the same troubles. Although the telephone is more sensitive both to atmospheric disturbances and to induced currents from other lines, and consequently is less reliable than the telegraph, yet it is more convenient than the latter for handling a certain class of business, such as reporting cars at passing points and places where there are no operators, for reporting breakdowns, interruptions to service and all other kinds of business where it is necessary to get in close touch with the party addressed. In many cases quick action and an immediate response is required; nor does one wish to talk through a second party—the operator—when it is possible to communicate personally with the person wanted. There is sometimes a great deal of satisfaction in talking direct to the train crews, substation attendants, and other employes. For such work the telephone is most desirable, and for other cases, where one does not care for a personal interview a telegraph line has its advantages.

The great trouble with the telephone for despatching purposes is that the currents used are so small the lines will easily pick up foreign and induced currents from parallel circuits. Consequently the instruments are very noisy unless the line can be built to remain unaffected. Telephone transmitters usually operate on from two to four volts, and, as their resistance is from ten to twenty ohms, they will not transmit over about one watt. If a transmitter could be designed to handle, say, one hundred watts, then the receivers could be made less sensitive to currents from foreign lines, and they would not be affected by atmospheric conditions.

The composite system has all the advantages of both systems, with very little additional expense. It introduces no new troubles or complications and greatly diminishes the likelihood of a total interruption.—Street Railway Journal.

The Military Telegrapher in the Civil War.

PART FIVE.—(Concluded.)

[The story related by John Lonergan, of Marysville, Kan., a military telegraph operator in the Civil War, of the part sustained by him in active army operations in the field during that period, printed from a letter written by Mr. Lonergan to Colonel William R. Plum, the historian of the military telegraphers, in 1878, so interestingly told in part in the June 16 issue of *Telegraph Age*, is herewith concluded.—Editor.]

In concluding this sketch I wish to revert to an incident previously overlooked by me. On the march to Chattanooga (1863) we extended the telegraph wire along the railroad, leaving the rails at Neck o' Jack cave and there ascending Sand mountain with our wire to connect it with the signal station on the crest under charge of Captain Batchelder. This signal station was in communication with six others. It was virtually a repeating station, keeping up and transmitting signals between the Twenty-first Corps moving along the north bank of the Tennessee river and the Twentieth and Fourteenth Corps on the south bank.

Our mission was to receive and forward such communications as were given us that could be reached by wire. It used to worry the signal officers to see us receive an eighty-word message in about three or four minutes that would take them an hour to send to destination by their system. The maintaining of communication by wire from Stevenson, Ala., to General Crook's headquarters at Maysville, Ala., was hazardous in the extreme. It was a long line of nearly fifty miles, running through the foothills of the neighboring mountains and close to the Tennessee river, and until the capture of the guerilla, Frank Gurley, we could but operate the wire during the day, for it was cut every night. When I first went to open up this line, I went on an engine with Captain Craig, quartermaster of the Second Cavalry Division, and Sheets, our citizen scout. At Woodville we were dropped into a culvert by a torpedo, and received a volley from the Rebels. Sheets had his ankle broken by the rail coming into the cab of the engine; the rest of us escaped all injury. It was then dark and a heavy rain-storm had set in. After a long discussion as how to reach Paint Rock Bridge, where we knew the Fourth Ohio Cavalry, under Major Patton, was stationed, it was decided that three operators should make the effort and get help for our beleaguered squad. Captain Craig, Conductor Hammel and myself volunteered to go. This undertaking was to me a dangerous exploit. For two miles we walked along the track, our only guide being an occasional flash of lightning that would light up our path and show us the track; yet we were glad when total darkness enveloped us, for we expected that at every flash of lightning we would receive a volley from some Rebel outpost. We were as near the Rebel command as we were of our own, but our greatest danger lay, however, in coming in sudden contact with our own troops.

In passing in Indian file through a long stone

cut near Paint Rock Bridge we were challenged and ordered to halt, a summons to which I answered, "We have halted." I did not know whether the challenge came from our men or from the Rebels. Directly came the demand, "Who are you and how many?" Captain Craig replied three and unarmed. One of us was ordered to advance. I went forward, holding out both hands; in my right hand was my combination instrument.

As I neared the videt post the lightning flashed and revealed four men covering me with their guns. They commanded me to halt and desired to know what I held in my hand. I told them a telegraph instrument. They bade us come up closer. Realizing that I was telling the truth, they told me to call up my "pard's." We were taken prisoners, but our captors were Union men. We were informed by the sergeant that five or six times he had ordered his men to level their carbines in our direction, intending to fire on us, and as often told them to recover arms. As we realized our narrow escape from death the sweat rolled off from us in great drops. A prayer of thankfulness was in our hearts for our deliverance. As only three hours previous to our coming this same squad had repelled an attack from the Rebel scouts in the same cut in which we were apprehended, it showed that we had approached old, tried and brave soldiers who never fired without knowing at whom. I opened my office in Major Patton's tent next morning, and sent word to General Crook, at Maysville, by Captain Craig, that I was ready for business, and would extend the wire to Maysville as soon as possible.

It was from Paint Rock Bridge that I sent the despatch from General Grant to General Sherman, by that prince of scouts, Corporal Pike, ordering General Sherman to move towards Chattanooga and abandon his line of communication with Memphis. General Sherman was keeping open communication with Memphis. He abandoned it and made forced marches in time to take a hand in the Missionary Ridge fight. The dangers that Corporal Pike passed through in bearing this message would make your hair stand on end. He made the trip most of the way in a canoe, and I think met Sherman's advance at Tusculumbia.

On the march to Atlanta my position most of the time was in the rear until the fall of that city. I was then assigned to General Gerrard, commanding the Second Cavalry Division. The line was ordered extended to Roswell's factory via Keys Cross Roads. Billy Patterson superintended its construction, but was halted when within five miles of Roswell's because of a Rebel advance. I remained with General Gerrard until assigned to General O. O. Howard, commanding the Army of Tennessee. The messages I used to send in cipher by scouts during the march from Pocatigo to Goldsboro were those giving information as to our progress and other details of our movements for the information of the general government at Washington. The scouts General Howard employed for this purpose were negroes.

They proved a failure. Only our own soldiers were ever successful in reaching the fleet. The first communication we received by scouts from the outside world in cipher was from General Scofield. It was brought to us during the engagement near Fayetteville, N. C. The message was addressed to Charles Eddy.

Corporate Management Compared with Government Control.

BY ELIJAH W. SELLS.

(From an address delivered before the Society of Certified Public Accountants of the State of New Jersey, January 20, 1908.)

The position of the public accountant in respect to corporations and their management is always an independent one. Unlike the attorney he is not expected to make out a case. The character of the service he renders is impersonal. All he can do is to tell what the facts are, and they exist for his examination in forms so tangible and so subject to other scrutiny than his own that even if he were willing to prostitute his calling he would never dare to do so.

Our country just now is passing through a period of acute financial stringency. The securities representing its properties are selling at prices that range from thirty to sixty per cent lower than were obtained for them one year ago. The money needed to keep business going is harder to get to-day than was any sum, however great, for the extension and development of business one year ago, and the questions, What is the matter? How has this come about? Who is responsible? are on everybody's tongue. The answers that are so generously provided seem to me very wide of the mark. Usually they involve grave reflections upon corporate management, and usually they come from a class of people who are particularly glib with their tongue, or ready with their pen, and who seem to have no other qualification for throwing light upon so grave a problem.

We are told that the corporation managers are dishonest; that they "exploit" the people and their utilities; that they put their own enrichment above their duty to the stockholding interest or to the patronizing public; and that before there can be a return of the splendid prosperity we were enjoying, the corporation must be regulated and the government must step in with a sharp eye and a big stick.

My experience in the conduct of independent and impartial examinations of books of account and affairs has covered many years and has been concerned with the federal government, state governments, and city governments. It has covered the field also of railway, street railway, light, power, and other public service corporations. It has dealt with industrial corporations, the so-called "trusts." It has taken me into banks, trust companies, and insurance companies; into educational and charitable institutions. I think I may say it has taken me pretty generally over the

whole field of public and private business, and if I am to judge by what my eyes have seen, it is the unassailable truth that almost any one of the men who stand at the head of our great business institutions is far more competent to run the government, and would run it more economically, more wisely, and more honestly than any of those who are in the business of running governments.

I know as a matter of fact that the management of our great properties is generally intelligent and economical, and that the management of our government bureaus is generally loose, irregular, and frequently dishonest; and when I read the articles with which so many of our newspapers and magazines are filled nowadays, reflecting on the men whose genius is developing the country's resources, and when I hear the proposals of politicians, from the most eminent to the least, for the passage of laws to hamper and restrict the energies of these men on the theory that their integrity is open to suspicion, my mind inevitably brings up the contrast that I always observe between a corporation's way of doing things and a government's, as disclosed by their respective records and books of account.

For the purpose of this comparison, incompetency and dishonesty need not be separated. Putting them together it is my deliberate estimate, that, judged, by the highest standards prevailing in the best conducted corporations, there is less than ten per cent of both among men in the management of corporations generally, and at least ninety per cent of both among public office holders, and I base this estimate upon my experience as a public accountant.

The men entrusted with the management of the corporations are better fitted to administer the affairs of such corporations and to exercise judgment in matters concerning both the investor and the public which takes their product or utilizes their franchises, than are those men who hold public office qualified to fill even their own positions, much less to undertake administrative control over corporations. The facts that prove this do not deal with the mere matter of honesty and efficiency. The organization of a public bureau is much less compact, much less harmonious in its operation than the organization of a great railway or a great industrial corporation.

The men at the head of such business organizations, in practically every case, are experts, working diligently, in harmony, and ready to work to the limit of their endurance, with full and direct control of their subordinates. On the other hand, nothing can be more notorious, the results are obvious to every public accountant who investigates, than the fact that in nine cases out of ten the head of a public department spends most of his time promoting his political interests, and the employes generally, protected by the civil service regulations, are looking to see how little rather than how much work they can get into their appointed short hours.—Concerning Municipal Ownership.

The Filing Time Law in Maryland.

On June 30 the new law in Maryland which requires the time of filing to be placed on delivered copies of all telegraph messages, became effective. This measure according to those who were really responsible for its passage, was devised ostensibly as a means to prevent the mailing of telegraph messages at a time of strike. Its enforcement which in effect adds to the cost of sending a telegram, is arousing a storm of indignation and resentment. The people of Maryland evidently never imagined they would be called upon to pay for the extra words made necessary by placing the filing time on each message, otherwise probably an early protest would have been heard in opposition to a bill of this character.

The question, however, is to be tested as to its constitutionality by the Postal Telegraph-Cable Company. The attorneys for the company contend that the sender of the message, who alone is interested in the contract, has the right to waive the provisions in reference to the time file mentioned in the statute.

The statute requires that the office sending the message shall send to the receiving office the time the message was received at the originating office. Thus, if the message were received at 10:55 in Baltimore to be sent to a person in Frederick, Md., the operator in Baltimore would telegraph to the operator at Frederick the time the message was received in Baltimore. This, of course, would require extra words. Both telegraph companies are charging the sender for these extra words. The statute, however, does not require the company to send these extra words without compensation.

But the Postal company contends that the sender of the message can waive this provision, and in order to test the right of the sender to do so, this special case was sent to the grand jury at the instance of State's Attorney Owens and Mr. Howard Bryant, attorney for the Postal Telegraph-Cable Company.

On June 22 Mr. Bryant wrote to the attorney-general in reference to the matter as follows:

My idea as counsel for the Postal Telegraph-Cable Company is that the sender of the message has a perfect right to waive this provision, as to the time the message was received for transmission, because there will be an extra charge for sending to the receiving operator the time the message was filed for transmission.

For these extra words a charge would have to be made, which would have to be paid for by the sender of the message, consequently I hold that the sender, who alone is interested in sending the message and who makes the contract with the company, has a right to waive this requirement if he sees fit, because if he is deprived by the statute of this right, then the statute will be unconstitutional, as it will be an interference with the sender's right of contract.

I again hold that if the company must transmit these extra words, if the sender does not wish it and the public has no interest in the telegram, it also would be unconstitutional and beyond the police power of the state. It seems to me the matter can be satisfactorily solved in this way: That whenever the sender wishes to waive the right he

can do so; in all other cases, there being no waiver, the statute stands.

Again on June 27 Mr. Bryant wrote to the attorney-general:

That inasmuch as the statute on its face seems to be mandatory it will be unsafe for my company not to transmit the time file and hence I am obliged to advise them to transmit it, the costs, of course, to be charged to the person sending the message. I feel, however, that inasmuch as the public, other than the sender of the message, has no interest whatever in having the time file transmitted, and inasmuch as the sender of the message is the only party who has the real right to insist upon it, hence he should have the right to omit it if he wishes to.

A test case should be made up at once, so that the court may determine whether or not the sender of the message must have this time file inserted in his message, whether he wants it inserted or not.

It is our contention that it would be an unconstitutional infringement upon his liberty of contract and property rights to compel him to pay for the transmission of the time file that he does not want transmitted, and that the public generally has no interest. In other words, I believe that he is entitled to waive it if he wishes, hence I suggest that we transmit a local message without the time file at the express request of the sender, and you, as attorney-general, or the state's attorney, will thereupon institute a case wherein we can test its constitutionality and ask the court for a quick decision. This we will do for the benefit of the public and not for our benefit, because as you can readily see, if the public must have the time file transmitted, we would receive that much more money on each telegram.

In consequence of the correspondence State's Attorney Owens had a case sent before the grand jury and the matter will come before the court for construction as early as possible.

The case was based on the following telegram sent in violation of the act:

John Doe, Frederick, Md.:

C. C. Huntzberry will file this message on account non-delivery

W. W. HELLAWELL.

This message, it will be seen, bears neither the time of transmission nor the time it was received.

State's Attorney Owens, who is very much interested in the test of the constitutionality of the act, said that he was unable to arrive at anything like a logical idea as to its purport. He said that he could see no necessity for such an act.

The act, which was passed at the January session of the last Maryland legislature, and became effective on the last day of June, is as follows:

Section 1. Telegraph companies engaged in the business of transmitting communications by telegraph in the state of Maryland, and charging tolls therefor, shall show conspicuously on each and every telegram delivered the time it was filed for transmission and the time it was received at the office at which it is to be delivered.

Section 2. The time of filing the telegram at place of origin and the time received at destination of each and every telegram transmitted as provided in section 1 shall appear on each and every telegram under the caption "Time filed" and "Time received."

Section 3. Failure to comply with the provisions of sections 1 and 2 of this act shall be punishable by a fine of not less than \$10 nor more than \$200 for each and every telegram delivered in violation of said sections 1 and 2.

Section 4. This act shall be in force and effect on and after June 30, 1908, in accordance to the Constitution of the State of Maryland.

The Military Telegrapher Should Be Pensioned..

Following the lead of the Republican party in its expression concerning pensions, adopted at its convention, commented upon editorially in our issue of July 1, the Democratic National Convention incorporated the following in its platform:

We favor a generous pension policy, both as a matter of justice to the surviving veterans and their dependents, and because it tends to relieve the country of the necessity of maintaining a large standing army.

It will be noted that the Republican plank is more ample and liberal in its expressions than the Democratic announcement. In both cases, however, there is ground for the belief that when Congress meets in December the military telegraph pension measure (Lorimer Bill—H. R. 175), which slumbers in the Invalid Pensions Committee of the House, or some similar measure, will receive favorable action and become law. We suggest, however, that to insure success each military telegrapher of the Civil War should make it his business to have his Congressmen, Senators and Representatives commit themselves to execute long-delayed justice to the small and fast-decreasing number of survivors of the corps whose members rendered such unique and important service to the country in its time of need.

Telegraphers' Mutual Benefit Association Notifies the Death of W. H. Young.

At a meeting of the executive committee of the Telegraphers' Mutual Benefit Association, New York, held July 1, the following minute was unanimously adopted:

"The executive committee of the Telegraphers' Mutual Benefit Association records with deep regret the death of its late vice-president, William H. Young.

"Mr. Young became a member of the association in 1872, and since 1876 was a regular attendant at its annual meetings. He served continuously since 1879 as its agent at Washington, D. C. He was elected a member of the executive committee in 1881, and a vice-president in 1882. His devotion to the interests of the association was untiring and unselfish and his efforts contributed largely to the achievement of its present prosperous condition. By his death this association has lost a zealous member, a wise counselor and an able officer.

"This minute is ordered inscribed as a tribute to his worth as a member and officer, as a mark of the high personal esteem in which he was held by his association, and as an expression of condolence and sympathy with his family."

To fill the office of first vice-president, made vacant by the death of W. H. Young, of Washington, Charles P. Bruch, of New York, was elected. S. S. Garwood, of Philadelphia, was elected second vice-president, and W. J. Lloyd, of Chicago, to membership in the executive committee.

Reunion of Old-Time and Military Telegraphers.

Preparations continue apace for the coming reunion of the Old-Time Telegraphers' Association and the Society of the United States Military Telegraph Corps, at Niagara Falls, New York, on September 16, 17, 18. The programme of entertainment so far as definitely arranged was published in our issue of July 1. The affair gives every promise of being a most delightful meeting, and many are looking forward to its occurrence with more than ordinary interest because of its practically enforced omission last year.

Obituary.

G. M. Jarvis, superintendent of the Intercolonial Railway at Truro, N. S., died of heart disease on May 3. He was born in 1851 in Pittsburg, Pa. He began railroad work in 1868 as a telegraph operator on the Intercolonial, in which service he rose to the superintendency.

James L. Ritter, aged sixty-seven years, a well known telegraph operator, died at Butte, Mont., on July 2, after an illness of several weeks of erysipelas. The deceased was a native of Toronto, Canada, and was formerly chief train dispatcher of the Chicago, St. Paul, Minneapolis and Omaha Railroad, at Mankato, Minn.

Dr. George Ewing Stuart, a former well-known telegrapher, died at Harrisburg, Pa., on June 17. From a messenger boy at Allegheny he became manager of that office. Subsequently he served as all night chief and finally as night chief operator in the main office at Pittsburg, holding the latter position when he resigned about January 1, 1895, to study medicine.

Richard G. Morris, a newspaper telegrapher who had worked on nearly all the New York newspapers, died in Bellevue Hospital, June 12, from an attack of kidney trouble. Mr. Morris was born in Columbus, Ohio, and he was fifty years old. He worked in the Cincinnati office of the Western Union Telegraph Company prior to 1880, when he transferred to the office in New York, in which city he had since been a resident.

Train Dispatchers' Convention.

The convention of the American Train Dispatchers' Association which met at Fort Worth, Texas, on June 16, 17 and 18, a reference to which was made in Telegraph Age in its issue of July 1, elected officers as follows: Vice-President Carl A. Mitchell, of Hartford, Conn., was made president; T. D. Dellmin, of Youngstown, O., vice-president, and J. F. Mackie, of Chicago, who has held the post for fourteen years, was re-elected secretary and treasurer. It was decided to hold the convention of 1909 at Columbus, O.

The following resolution was unanimously adopted, as has been the custom in previous years:

"We believe that the supreme aim of our association to be the elevating of its individual members

to greater efficiency in the performance of their duty as train dispatchers, and that this end can be best attained by excluding from consideration or discussion in any form all questions of hours worked, wages received or condition of the services required by the railroads of the dispatchers in their service."

Morse Electric Club Outing.

The outing of the Morse Electric Club, of New York, bids fair to be an interesting event. It will be held as previously announced at the Cove Hotel, Livingston, West New Brighton, Staten Island, a favorite resort of telegraph excursionists, on Saturday, July 18. This being the first affair of the kind undertaken by this new club, the entertainment committee, consisting of P. J. Casey, M. H. Kerner and R. J. Murphy, have been at much pains to prepare an especially attractive programme for the pleasure of those who attend. In addition to this Colonel Clowry, president of the Western Union Telegraph Company, has placed the cable tug "Western Union" at the disposal of the club to convey the guests to and from the point of meeting. The steamer will make two trips, leaving Starin's pier, at the foot of Cortlandt street, at one o'clock, and at three o'clock. The club is officered as follows: J. B. Van Every, president; J. C. Barclay and B. Brooks, vice-presidents; F. J. Scherrer, secretary, and R. J. Murphy, treasurer.

NEW YORK, WESTERN UNION.

F. B. Giles, assistant chief operator, accompanied by his wife, together with H. C. Worthen, night chief operator, and wife, passed a pleasant vacation lately in North Carolina, visiting at the former home of Mr. Worthen.

Mr. H. O. Bannister, manager of the Western Union Telegraph Company at Raleigh, N. C., is the agent for Telegraph Age in Western Union circles at that place, and for the territory adjacent thereto. All who have business with this paper coming under this jurisdiction, whether those who wish to renew their subscriptions, those intending to subscribe or those wishing to purchase telegraphic or other electrical books, for which this journal affords every facility through its perfectly equipped book department, are invited to communicate with Mr.

Bannister. He will attend promptly and properly to all requirements. Telegraph Age never before offered such an abundance of important, instructive and interesting matter as now. This paper is such an aid as to be invaluable to telegraphers.

Mr. G. W. Conkling, of the Laffan News Bureau, New York, was present as a representative of his company at the Democratic National Convention, Denver.

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Many expert code operators have examined the revised edition of this code, and all unite in pronouncing it perfect. Mr. George W. Conkling, who has won the championship for sending code in many tournaments, says:

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Directory of Annual Meetings.

Association of Railway Telegraph Superintendents meets at Detroit, Mich., June 24, 25, 26, 1909.
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 Gold and Stock Life Insurance Association meets the third Monday in January, at New York.
 Great North Western Telegraph Company meets the fourth Thursday in September, at Toronto, Ont.
 International Association of Municipal Electricians meets at Detroit, Mich., August 19, 20, 21.
 Old Time Telegraphers' and Historical Association, will meet at Niagara Falls, N. Y., September 16, 17, 18.
 Postal Telegraph-Cable Company meets the fourth Tuesday in February, at New York.
 Telegraphers' Mutual Benefit Association meets the third Wednesday in November, at New York.
 Train Despatchers Association meets in 1909 at Columbus, O., at a date to be determined upon.
 The stockholders of the Western Union Telegraph Company meet the second Wednesday in October, at New York; election of officers occurs on the third Wednesday in October.

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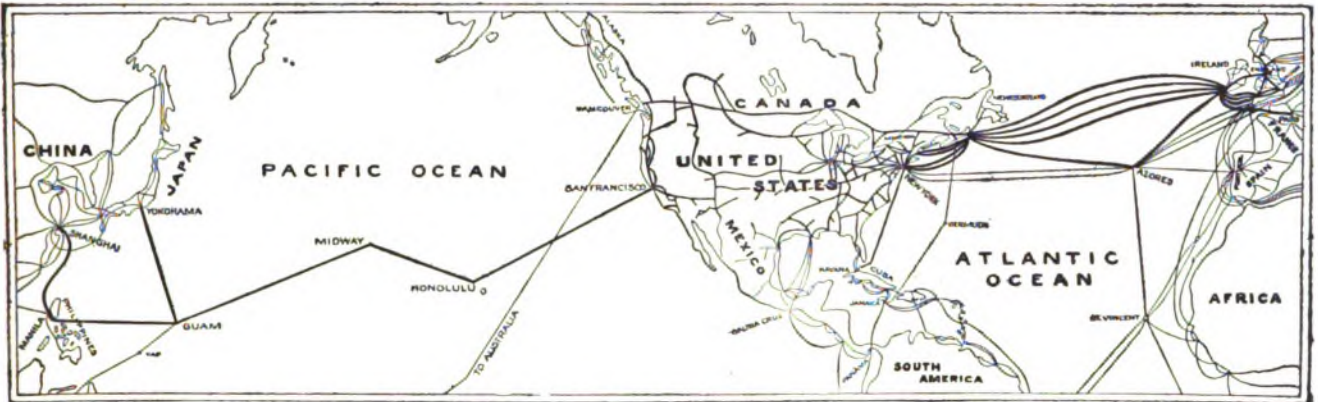
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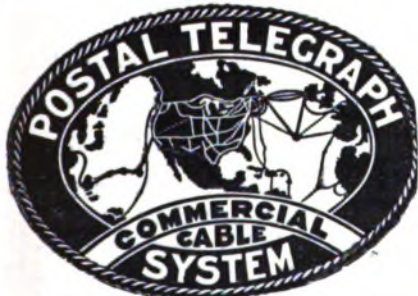
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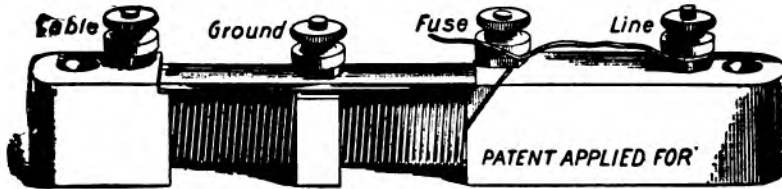
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